

4.2.C. 0601010403.

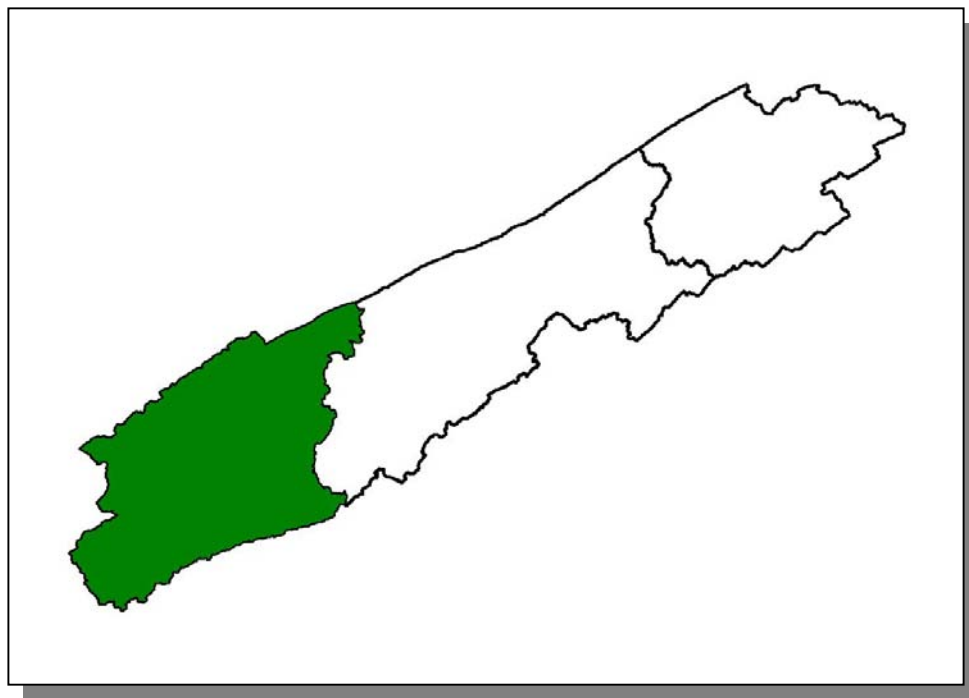


Figure 4-134. Location of Subwatershed 0601010403. All Holston River HUC-10 subwatershed boundaries are shown for reference.

4.2.C.i. 060101040301 (Holston River).

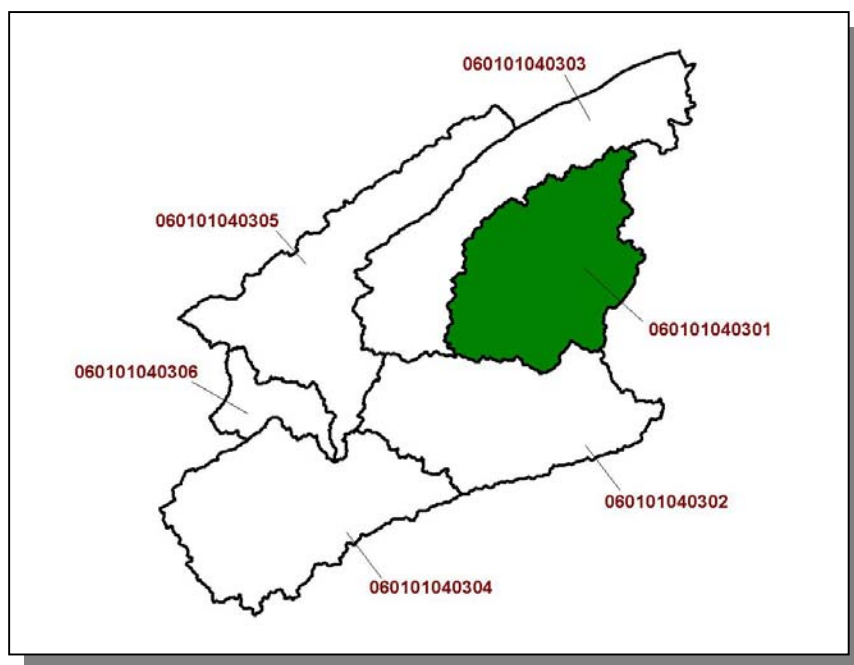


Figure 4-135. Location of Subwatershed 060101040301. All HUC-12 subwatershed boundaries are shown for reference.

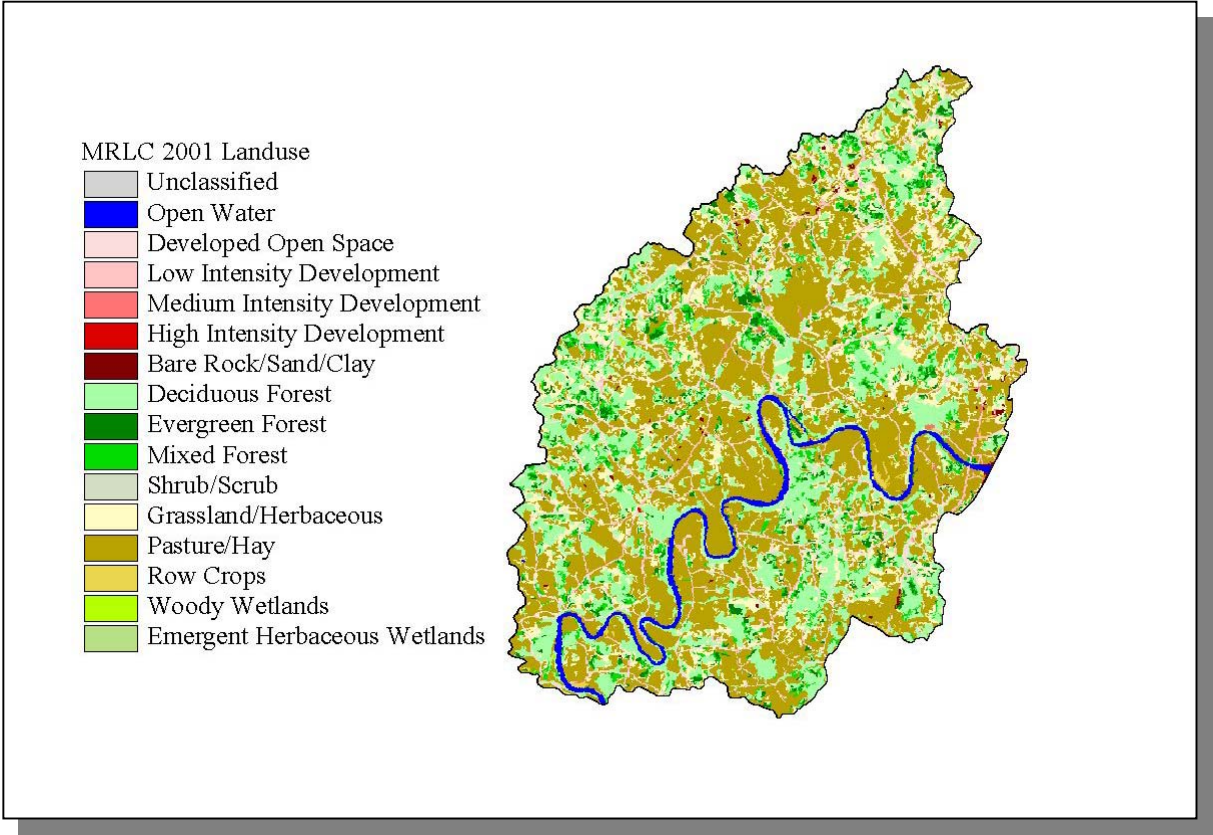


Figure 4-136. Illustration of Land Use Distribution in Subwatershed 060101040301.

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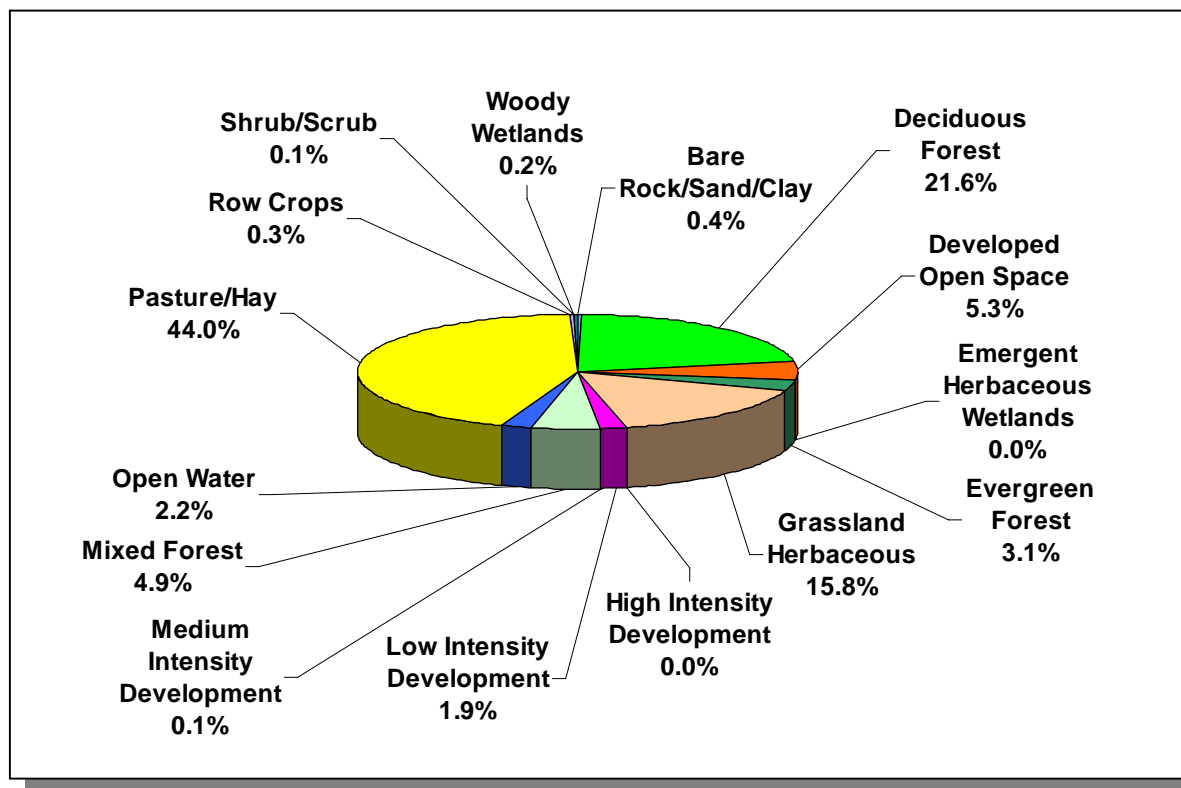


Figure 4-137. Land Use Distribution in Subwatershed 060101040301. More information is provided in Appendix IV.

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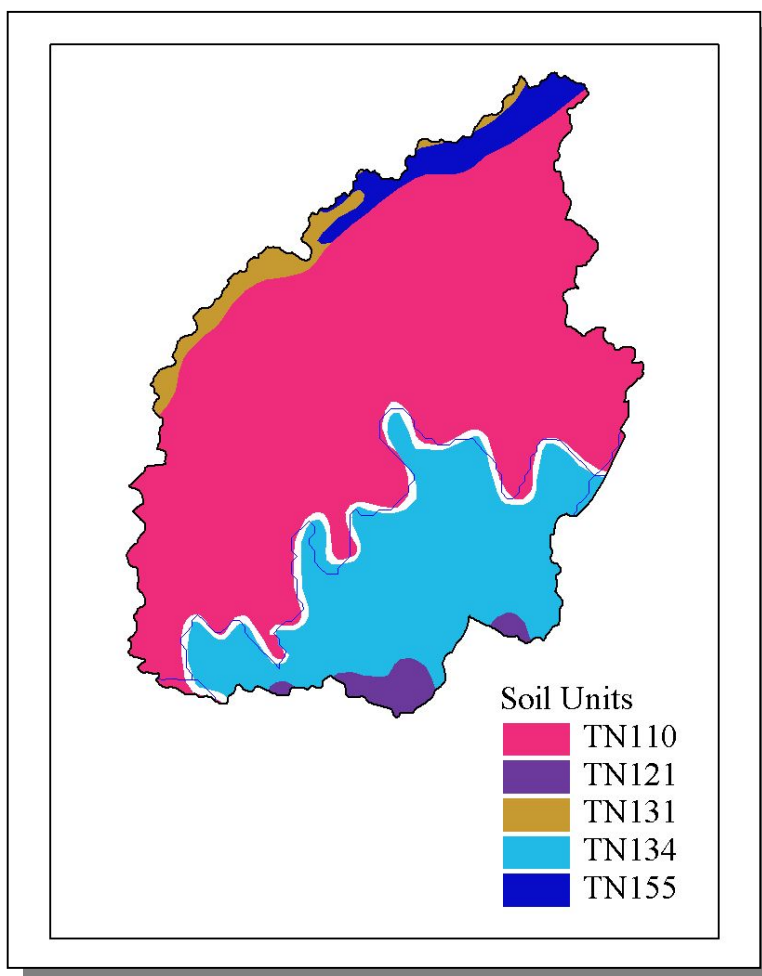


Figure 4-138. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060101040301.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN110	0.00	B	2.22	4.96	Loam	0.31
TN121	0.00	B	1.30	5.21	Loam	0.33
TN131	0.00	C	1.17	4.95	Silty Loam	0.33
TN134	0.00	B	1.38	5.18	Loam	0.31
TN155	0.00	C	1.71	5.31	Loam	0.32

Table 4-110. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060101040301. The definition of "Hydrologic Group" is provided in Appendix IV.

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County	COUNTY POPULATION			Portion of Watershed (%)	ESTIMATED POPULATION IN WATERSHED			% Change (1990-2000)
	1990	1997	2000		1990	1997	2000	
Grainger	17,095	19,456	20,659	15.65	2,676	3,045	3,233	20.8
Jefferson	33,016	42,168	44,294	5.24	1,730	2,210	2,321	34.2
Total	50,111	61,624	64,953		4,406	5,255	5,554	26.1

Table 4-111. Population Estimates in Subwatershed 060101040301.

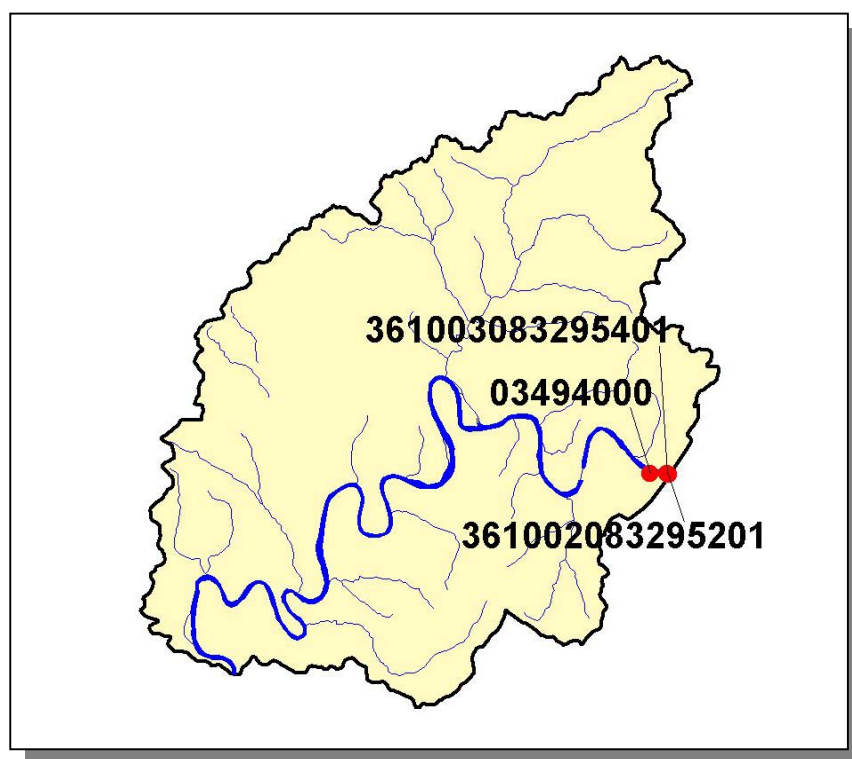


Figure 4-139. Location of Historical Streamflow Data Collection Sites in Subwatershed 060101040301. More information is provided in Appendix IV.

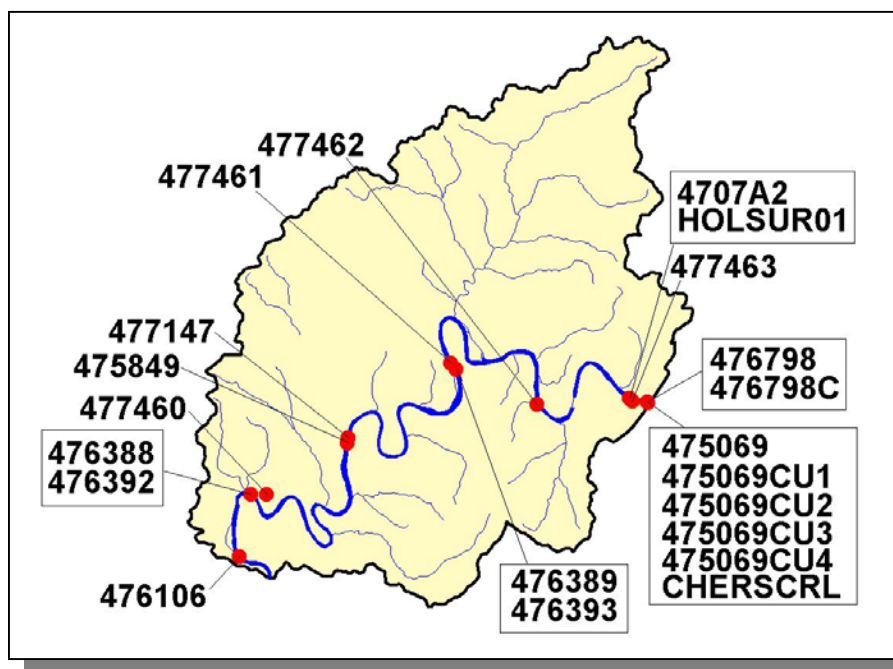


Figure 4-140. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 060101040301. More information, including site names and locations, is provided in Appendix IV.

4.2.C.i.a. Point Source Contributions.

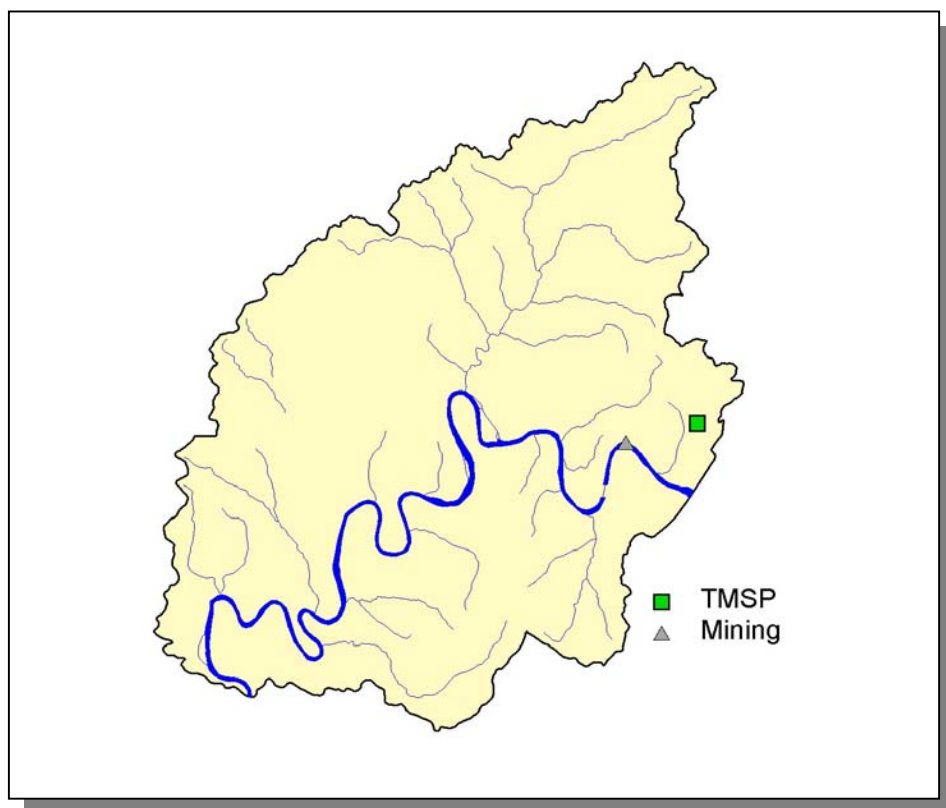


Figure 4-141. Location of Permits Issued in Subwatershed 060101040301. More information, including the names of facilities, is provided in Appendix IV.

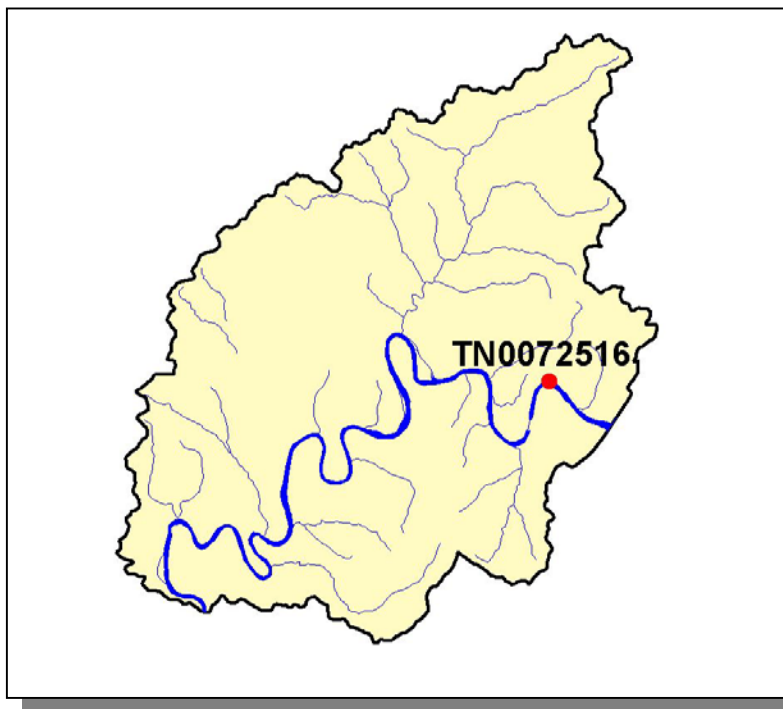


Figure 4-142. Location of Active Mining Sites in Subwatershed 060101040301. More information, including the names of mining operations, is provided in Appendix IV.



Figure 4-143. Location of TMSP Sites in Subwatershed 060101040301. More information, including the names of facilities, is provided in Appendix IV.

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4.2.C.i.b. Nonpoint Source Contributions.

LIVESTOCK (COUNTS)						
Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Chickens (Broilers Sold)	Hogs	Sheep
4,650	9,415	399	12	112,637	166	93

Table 4-112. Summary of Livestock Count Estimates in Subwatershed 060101040301.
According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older; "Chickens Sold" are all chickens used to produce meat.

LIVESTOCK COUNTS							
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Chickens (Broilers Sold)	Hogs	Sheep
Grainger	12,115	23,927	942	1,184	0	510	195
Jefferson	16,126	35,718	1,78	1,633	1,880,000	183	567

Table 4-113. Summary of Livestock Count Estimates in Grainger and Jefferson Counties.
According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older; "Chickens Sold" are all chickens used to produce meat.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Grainger	102.6	102.6	0.3	1.8
Jefferson	62.2	62.2	0.6	1.8

Table 4-114. Forest Acreage and Annual Removal Rates (1987-1994) in Grainger and Jefferson Counties.

CROPS	TONS/ACRE/YEAR
Grass (Pastureland)	0.89
Grass (Hayland)	0.30
Legumes, Grass (Hayland)	0.55
Grass, Forbs, Legumes (Mixed Pasture)	0.74
Corn (Row Crops)	10.08
Tobacco (Row Crops)	6.13
Oats (Close-Grown Cropland)	13.51
Farmsteads and Ranch Headquarters	0.39

Table 4-115. Annual Estimated Total Soil Loss in Subwatershed 060101040301.

4.2.C.ii. 060101040302 (Holston River).

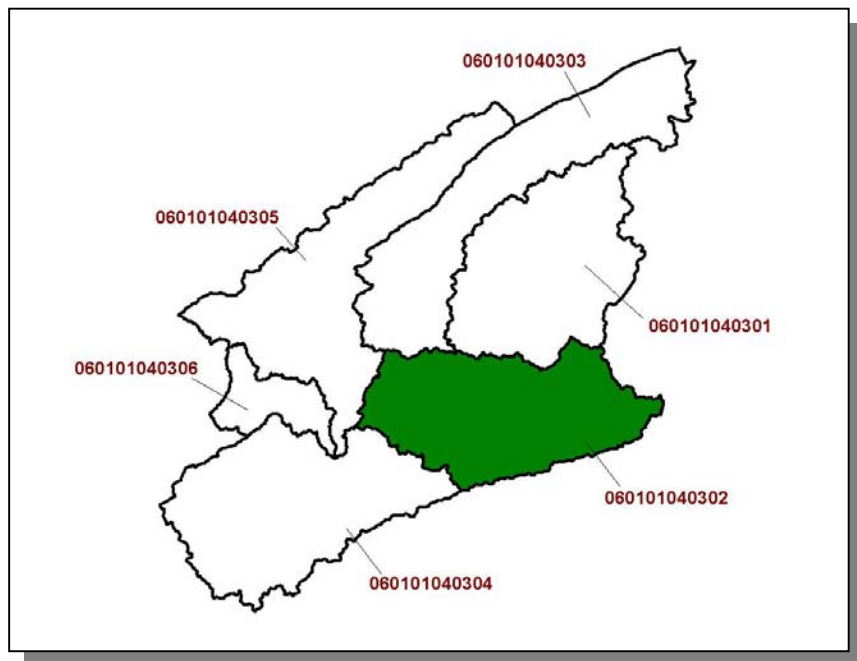


Figure 4-144. Location of Subwatershed 060101040302. All HUC-12 subwatershed boundaries are shown for reference.

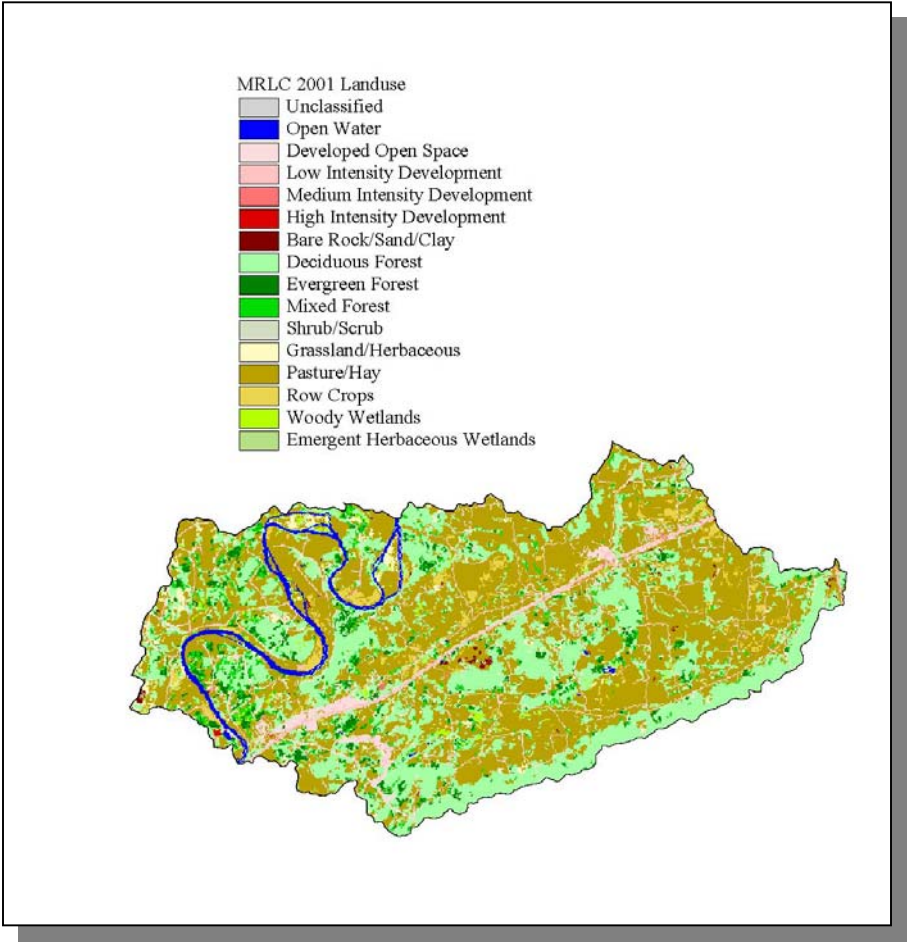


Figure 4-145. Illustration of Land Use Distribution in Subwatershed 060101040302.

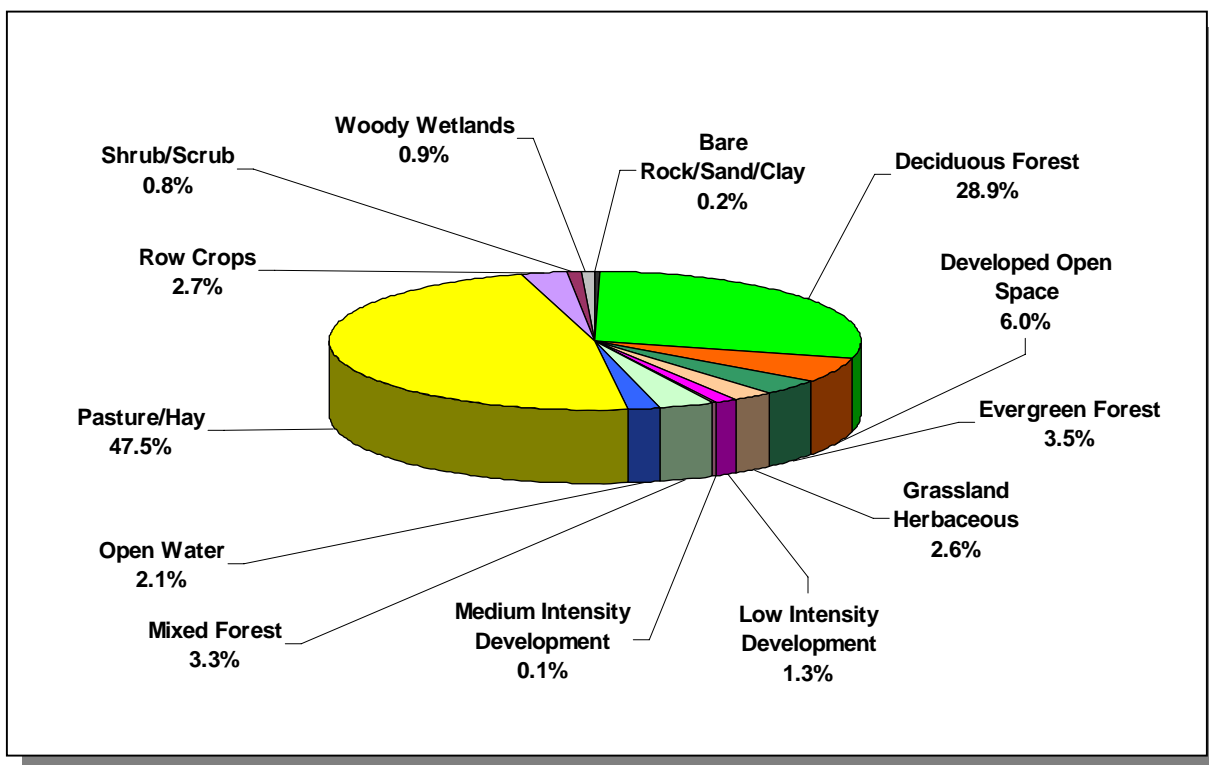


Figure 4-146. Land Use Distribution in Subwatershed 060101040302. More information is provided in Appendix IV.

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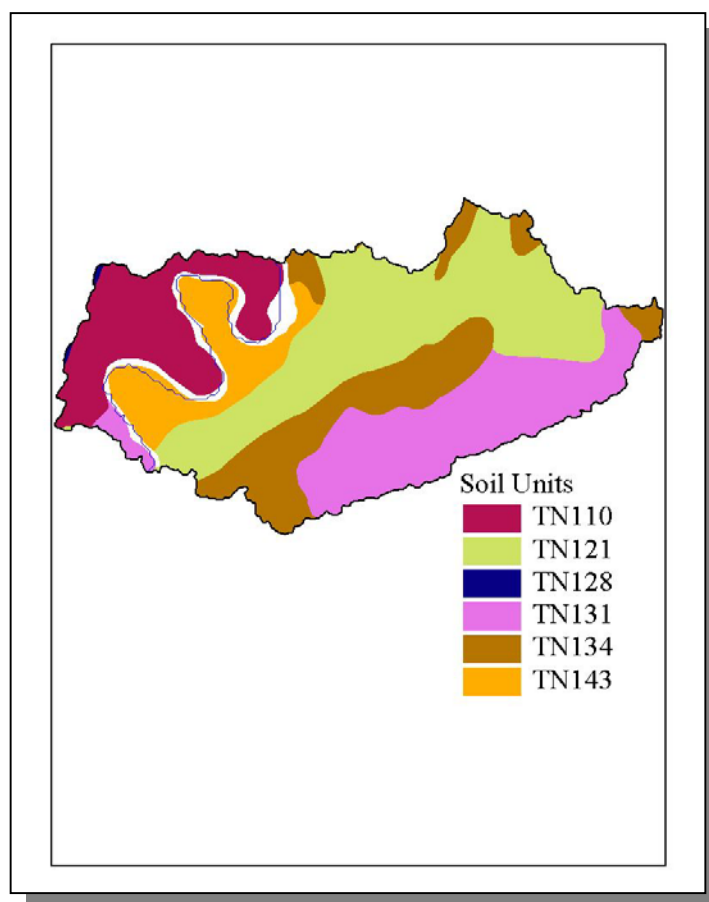


Figure 4-147. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060101040302.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN110	0.00	B	2.22	4.96	Loam	0.31
TN121	0.00	B	1.30	5.21	Loam	0.33
TN128	0.00	C	1.30	6.53	Clayey Loam	0.26
TN131	0.00	C	1.17	4.95	Silty Loam	0.33
TN134	0.00	B	1.38	5.18	Loam	0.31
TN143	0.00	C	1.22	6.44	Loam	0.32

Table 4-116. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060101040302. The definition of "Hydrologic Group" is provided in Appendix IV.

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County	COUNTY POPULATION			Portion of Watershed (%)	ESTIMATED POPULATION IN WATERSHED			% Change (1990-2000)
	1990	1997	2000		1990	1997	2000	
Grainger	17,095	19,456	20,659	2.15	367	417	443	20.7
Jefferson	33,016	42,168	44,294	16.5	5,448	6,959	7,309	34.2
Knox	335,749	365,900	382,032	1.38	4,642	5,059	5,282	13.8
Sevier	51,043	62,774	71,170	0.05	26	32	37	42.3
Total	436,903	490,298	518,155		10,483	12,467	13,071	24.7

Table 4-117. Population Estimates in Subwatershed 060101040302.

Populated Place	County	Population	NUMBER OF HOUSING UNITS			
			Total	Public Sewer	Septic Tank	Other
Jefferson City	Jefferson	5,494	2,006	1,922	84	0
New Market	Jefferson	1,086	412	13	395	4
Blaine	Grainger	1,326	505	9	473	23
Total		7,908	2,923	1,944	952	27

Table 4-118. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 060101040302.

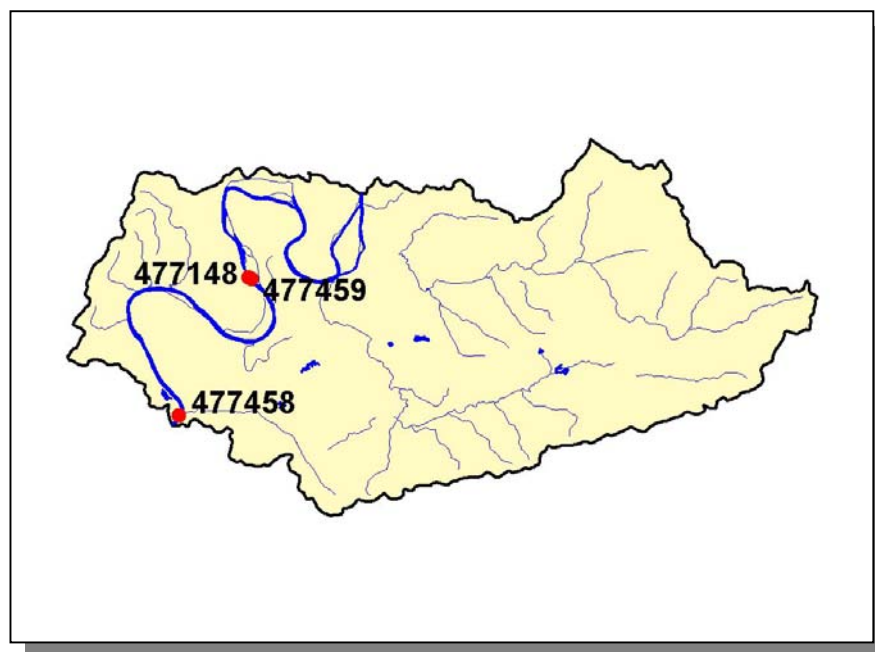


Figure 4-148. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 060101040302. More information, including site names and locations, is provided in Appendix IV.

4.2.C.ii.a. Point Source Contributions.

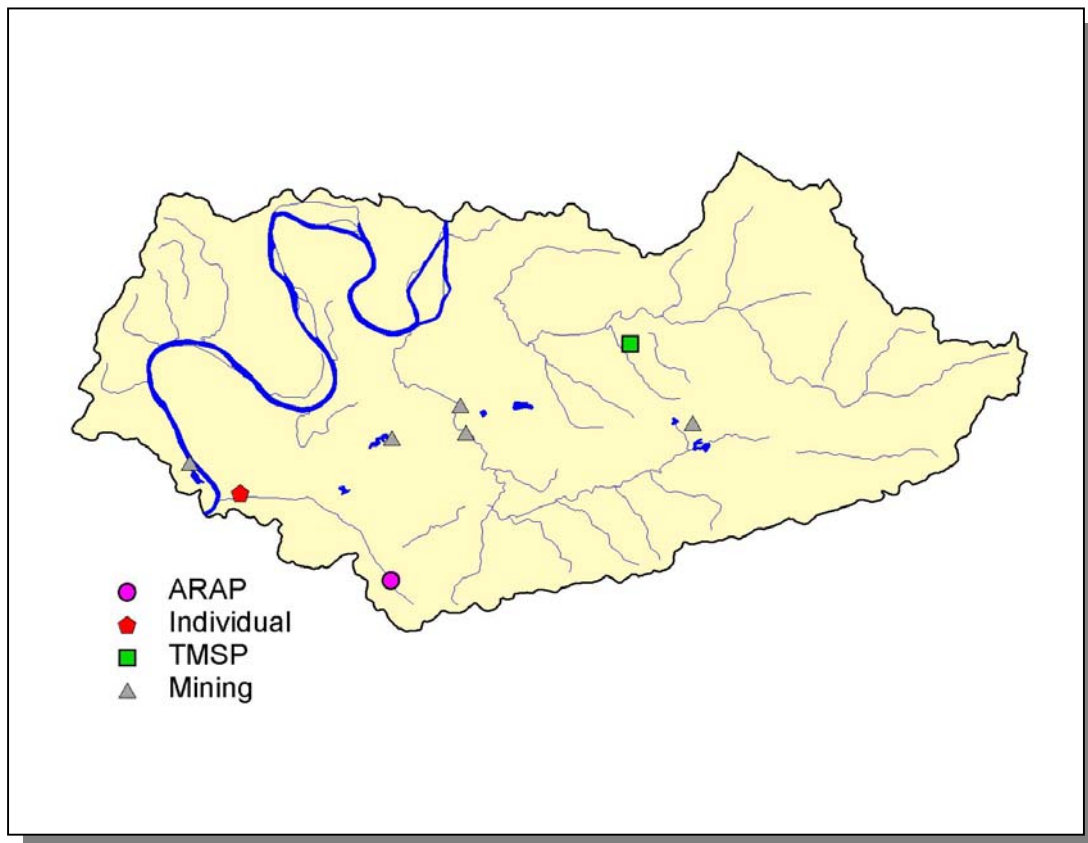


Figure 4-149. Location of Permits Issued in Subwatershed 060101040302. More information, including the names of facilities, is provided in Appendix IV.

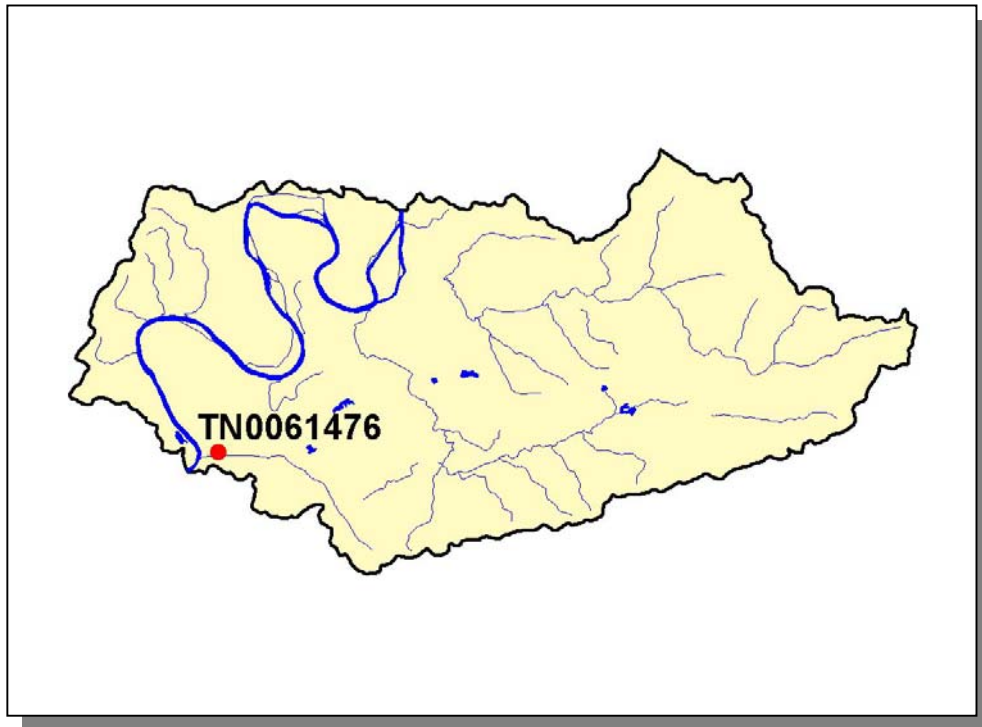


Figure 4-150. Location of Active NPDES Sites in Subwatershed 060101040302. More information, including the names of facilities, is provided in Appendix IV.

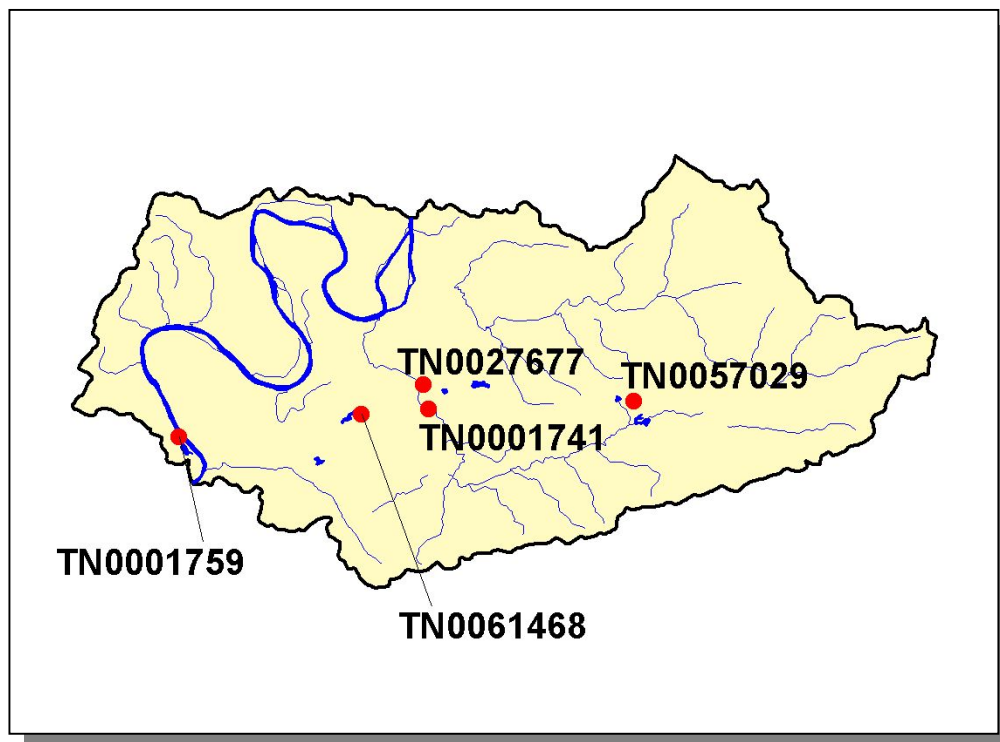


Figure 4-151. Location of Active Mining Sites in Subwatershed 060101040302. More information, including the names of mining operations, is provided in Appendix IV.

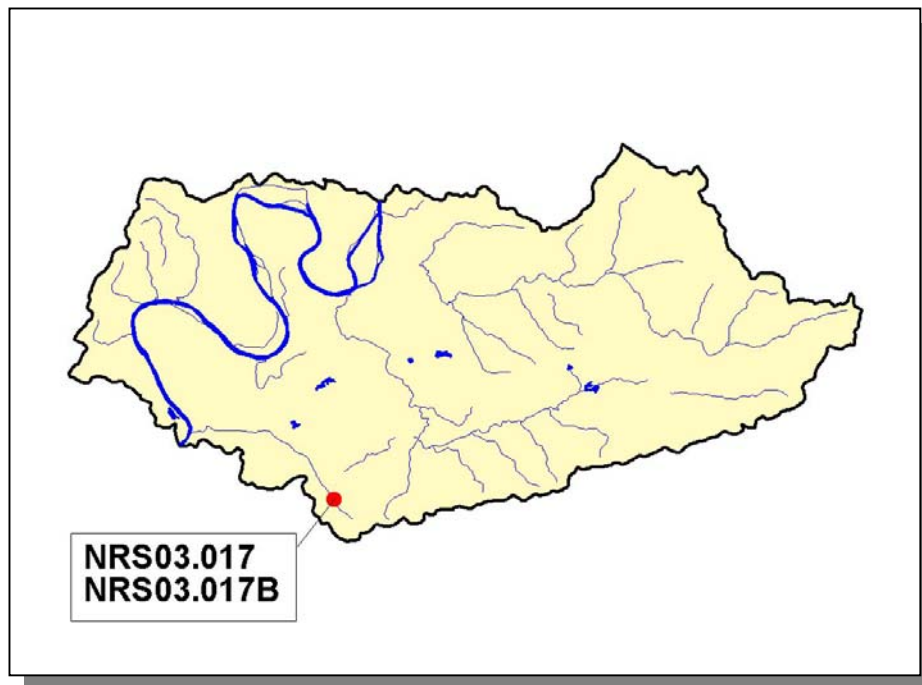


Figure 4-152. Location of Aquatic Resource Alteration Permit (ARAP) Sites (Individual Permits) in Subwatershed 060101040302. More information is provided in Appendix IV.

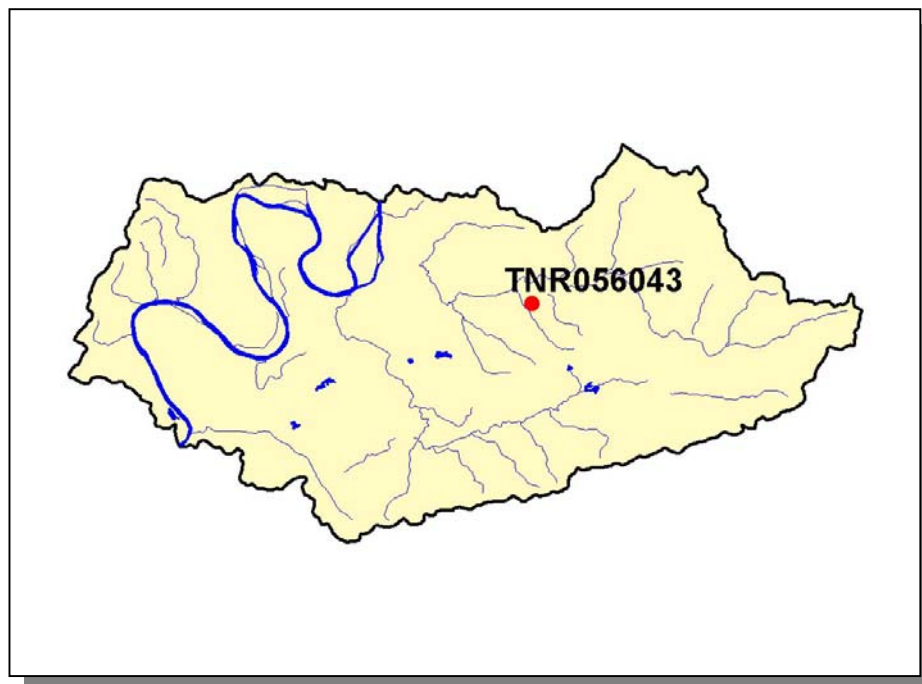


Figure 4-153. Location of TMSP Sites in Subwatershed 060101040302. More information, including the names of facilities, is provided in Appendix IV.

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4.2.C.ii.b. Nonpoint Source Contributions.

LIVESTOCK (COUNTS)						
Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Chickens (Broilers Sold)	Hogs	Sheep
4,023	8,722	433	7	375,189	82	142

Table 4-119. Summary of Livestock Count Estimates in Subwatershed 060101040302. According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older; "Chickens Sold" are all chickens used to produce meat.

LIVESTOCK COUNTS							
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Chickens (Broilers Sold)	Hogs	Sheep
Grainger	12,115	23,927	942	1,184	0	510	195
Jefferson	16,126	35,718	1,878	1,633	1,880,000	183	567
Knox	12,424	24,664	855	2,056	0	851	649
Sevier	9,816	19,013	172	26	1,572,010	394	234

Table 4-120. Summary of Livestock Count Estimates in Grainger, Jefferson, Knox, and Sevier Counties. According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older; "Chickens Sold" are all chickens used to produce meat.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Grainger	102.6	102.6	0.3	1.8
Jefferson	62.2	62.2	0.6	1.8
Knox	127.5	127.0	2.2	8.2
Sevier	254.5	127.4	0.3	0.9

Table 4-121. Forest Acreage and Annual Removal Rates (1987-1994) in Grainger, Jefferson, Knox, and Sevier Counties.

CROPS	TONS/ACRE/YEAR
Grass (Pastureland)	0.64
Grass (Hayland)	0.23
Legumes, Grass (Hayland)	0.38
Grass, Forbs, Legumes (Mixed Pasture)	0.48
Corn (Row Crops)	18.63
Soybeans (Row Crops)	15.54
Tobacco (Row Crops)	3.53
Oats (Close-Grown Cropland)	13.51
Summer Fallow (Other Cropland)	3.31
Farmsteads and Ranch Headquarters	0.07

Table 4-122. Annual Estimated Total Soil Loss in Subwatershed 060101040302.

4.2.C.iii. 060101040303 (Richland Creek).

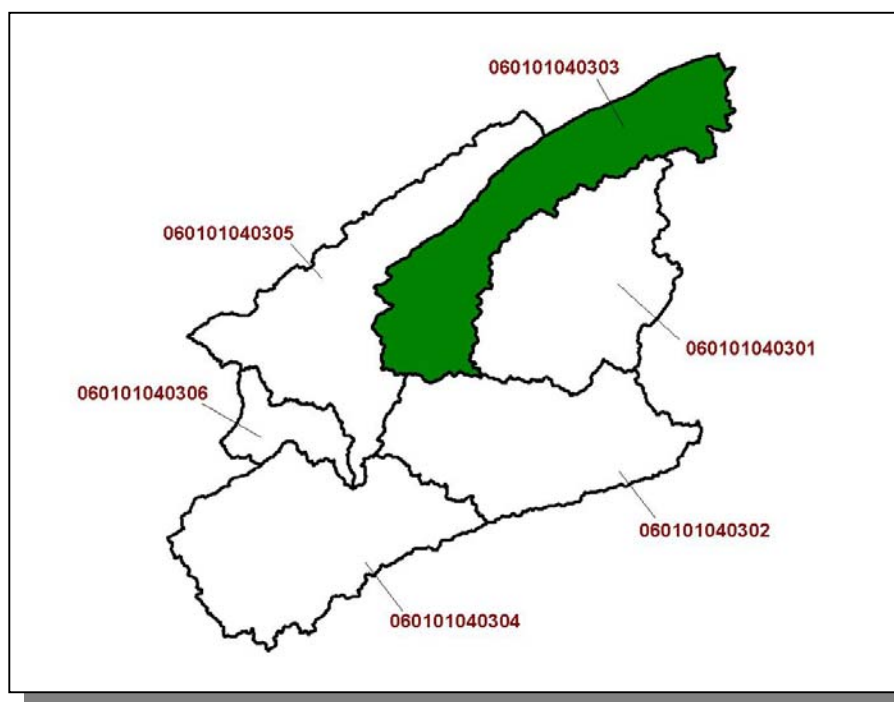


Figure 4-154. Location of Subwatershed 060101040303. All HUC-12 subwatershed boundaries are shown for reference.

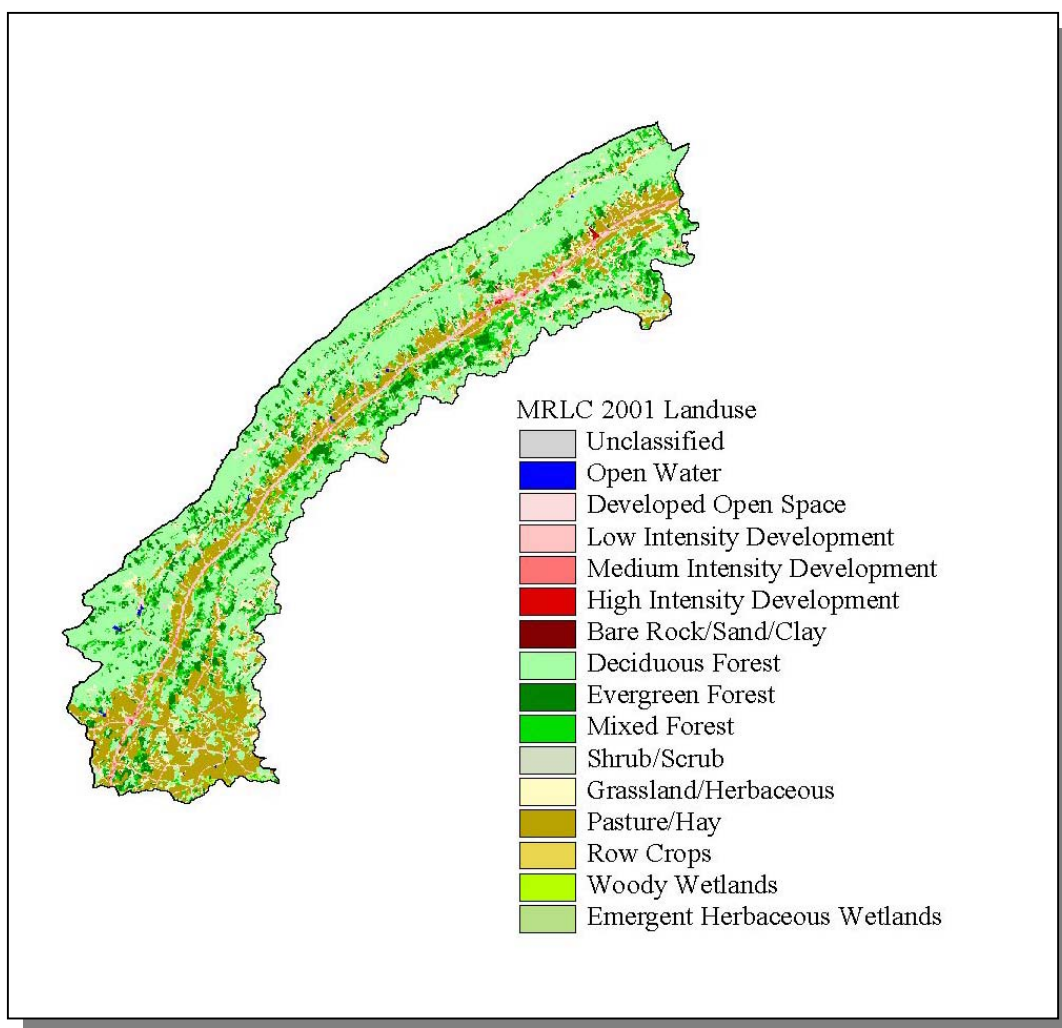


Figure 4-155. Illustration of Land Use Distribution in Subwatershed 060101040303.

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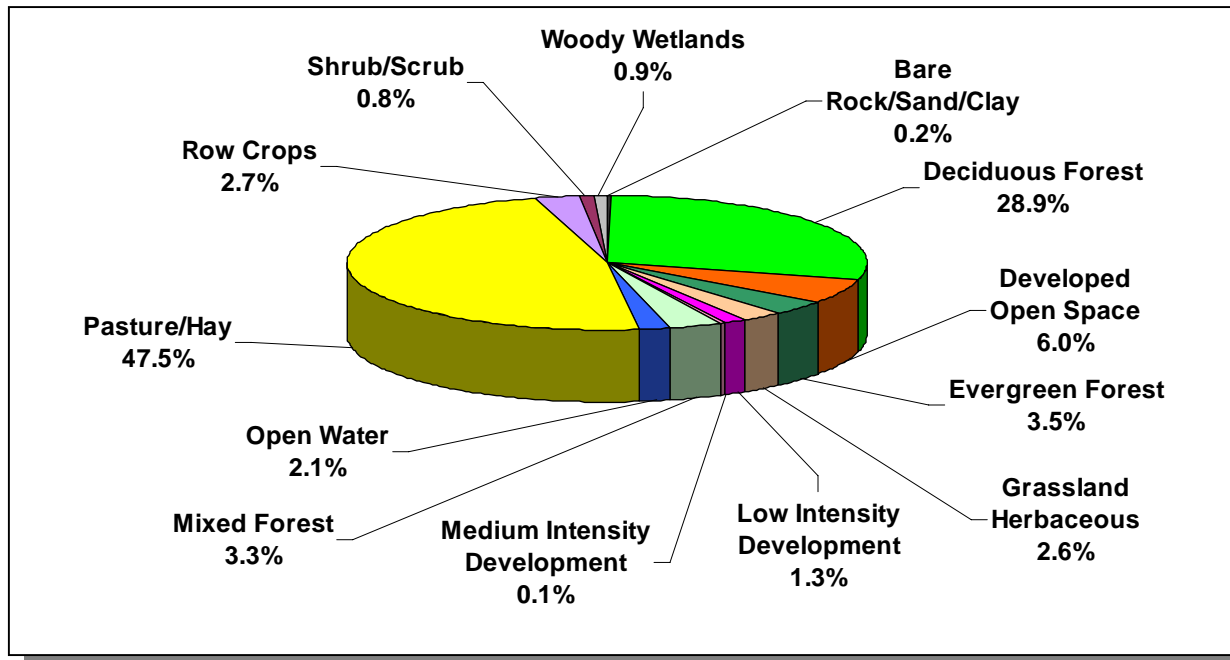


Figure 4-156. Land Use Distribution in Subwatershed 060101040303. More information is provided in Appendix IV.

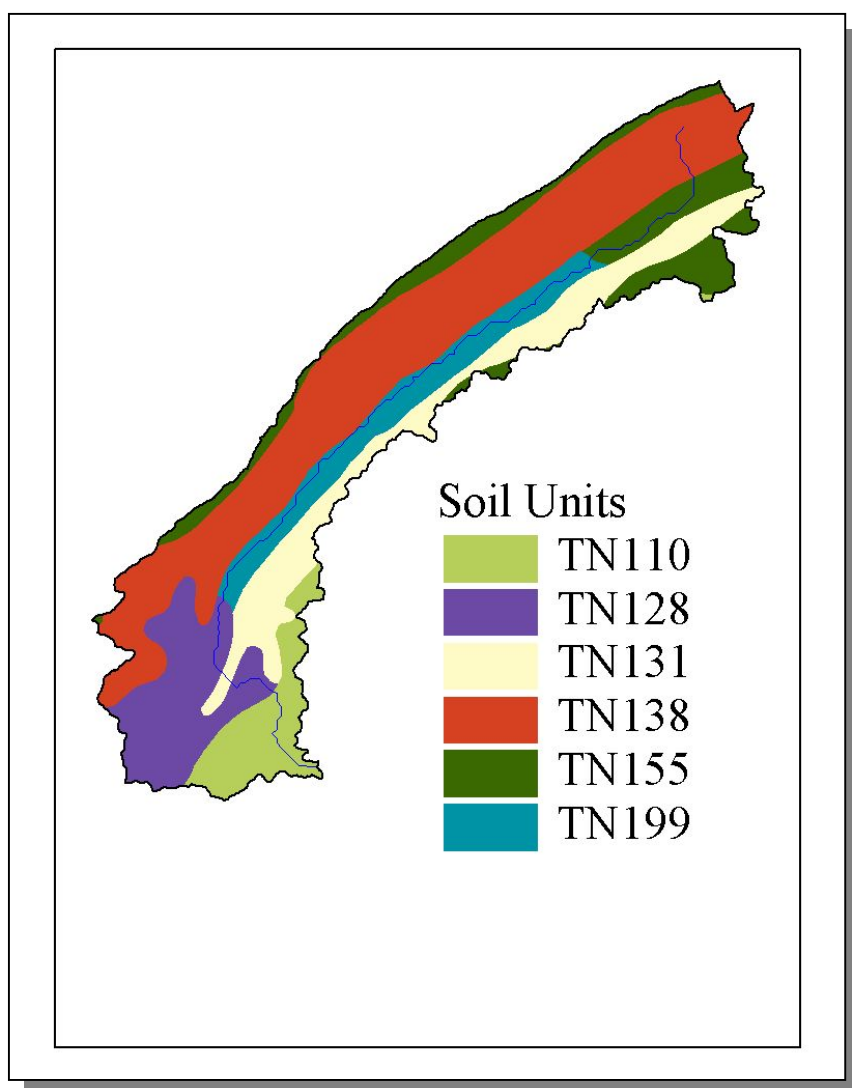


Figure 4-157. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060101040303.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN110	0.00	B	2.22	4.96	Loam	0.31
TN128	0.00	C	1.30	6.53	Clayey Loam	0.26
TN131	0.00	C	1.17	4.95	Silty Loam	0.33
TN138	0.00	C	2.48	4.26	Sandy Loam	0.22
TN155	0.00	C	1.71	5.31	Loam	0.32
TN199	3.00	C	1.22	4.75	Silty Loam	0.30

Table 4-123. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060101040303. The definition of "Hydrologic Group" is provided in Appendix IV.

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County	COUNTY POPULATION			Portion of Watershed (%)	ESTIMATED POPULATION IN WATERSHED			% Change (1990-2000)
	1990	1997	2000		1990	1997	2000	
Grainger	17,095	19,456	20,659	21.78	3,724	4,238	4,500	20.8
Knox	335,749	365,900	382,032	0.02	60	66	69	15.0
Total	352,844	385,356	402,691		3,784	4,304	4,569	20.8

Table 4-124. Population Estimates in Subwatershed 060101040303.

Populated Place	County	Population	NUMBER OF HOUSING UNITS			
			Total	Public Sewer	Septic Tank	Other
Blaine	Grainger	1,326	505	9	473	23
Rutledge	Grainger	878	369	213	151	5
Total		2,204	874	222	624	28

Table 4-125. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 060101040303.



Figure 4-158. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 060101040303. More information, including site names and locations, is provided in Appendix IV.

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4.2.C.iii.a. Point Source Contributions.

There are no point source contributions in this subwatershed.

4.2.C.iii.b. Nonpoint Source Contributions.

LIVESTOCK COUNTS					
Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
2,082	4,112	162	6	88	34

Table 4-126. Summary of Livestock Count Estimates in Subwatershed 060101040303. According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.

LIVESTOCK COUNTS						
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
Grainger	12,115	23,927	942	1,184	510	195
Knox	12,424	24,664	855	2,056	851	649
Union	5,540	10,575	105	981	93	96

Table 4-127. Summary of Livestock Count Estimates in Grainger, Knox, and Union Counties. According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Grainger	102.6	102.6	0.3	1.8
Knox	127.5	127.0	2.2	8.2
Union	102.5	102.5	0.1	0.0

Table 4-128. Forest Acreage and Annual Removal Rates (1987-1994) in Grainger, Knox, and Union Counties.

CROPS	TONS/ACRE/YEAR
Grass (Pastureland)	1.00
Grass (Hayland)	0.32
Legumes, Grass (Hayland)	0.60
Grass, Forbs, Legumes (Mixed Pasture)	0.84
Corn (Row Crops)	5.68
Soybeans (Row Crops)	15.54
Wheat (Close-Grown Cropland)	4.44
Tobacco (Close-Grown Cropland)	7.21
Farmsteads and Ranch Headquarters	0.52

Table 4-129. Annual Estimated Total Soil Loss in Subwatershed 060101040303.

4.2.C.iv. 060101040304 (Holston River).

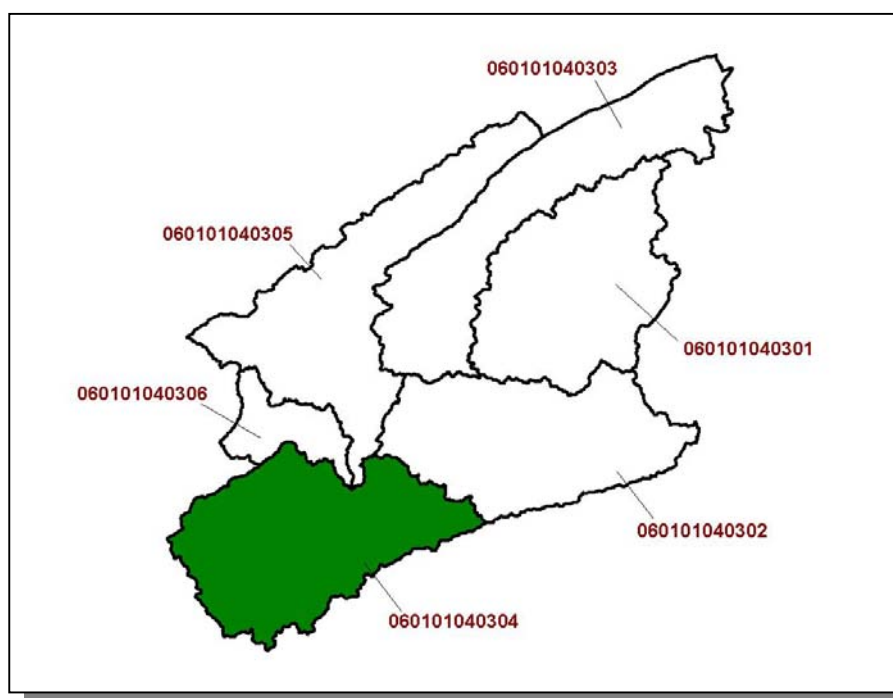


Figure 4-159. Location of Subwatershed 060101040304. All HUC-12 subwatershed boundaries are shown for reference.

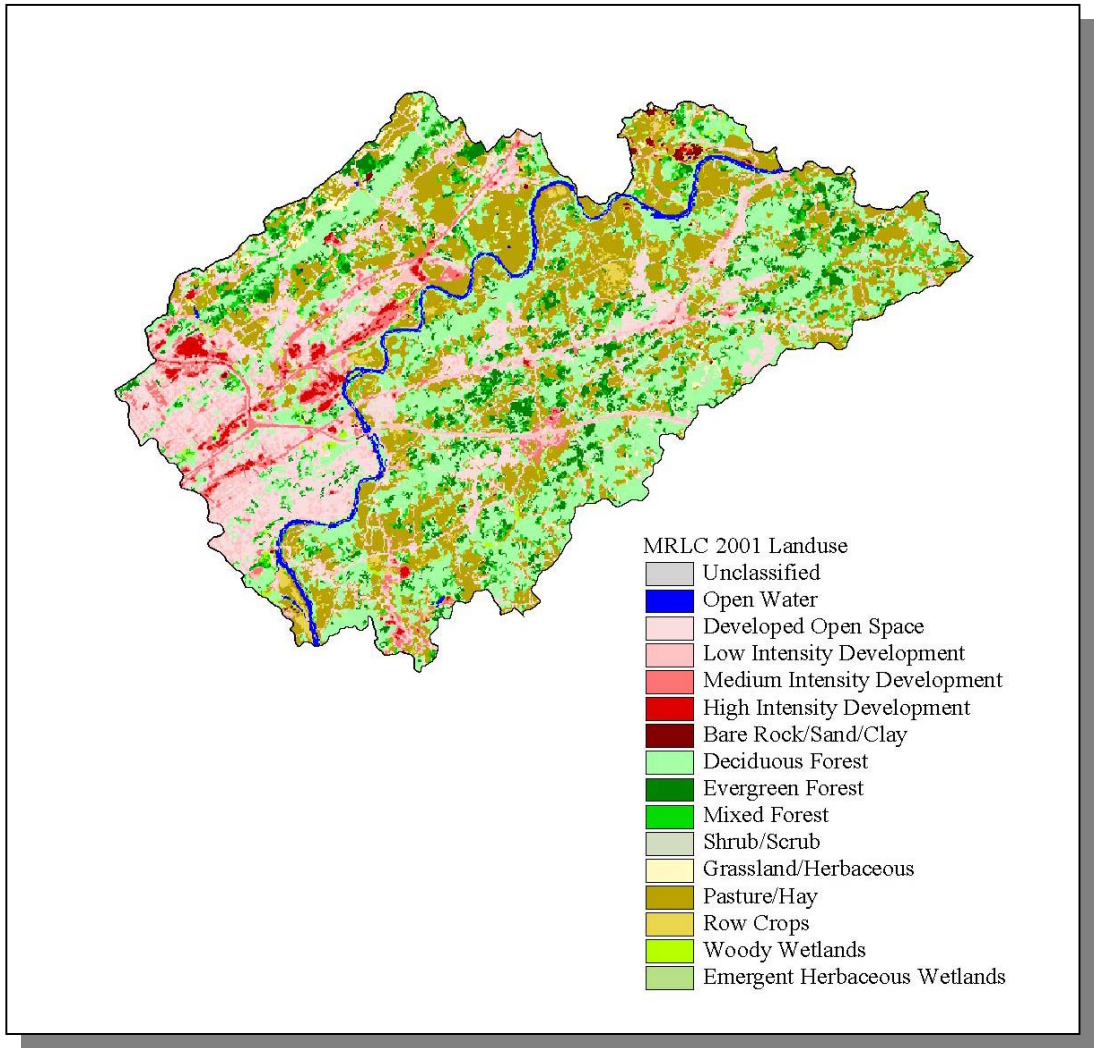


Figure 4-160. Illustration of Land Use Distribution in Subwatershed 060101040304.

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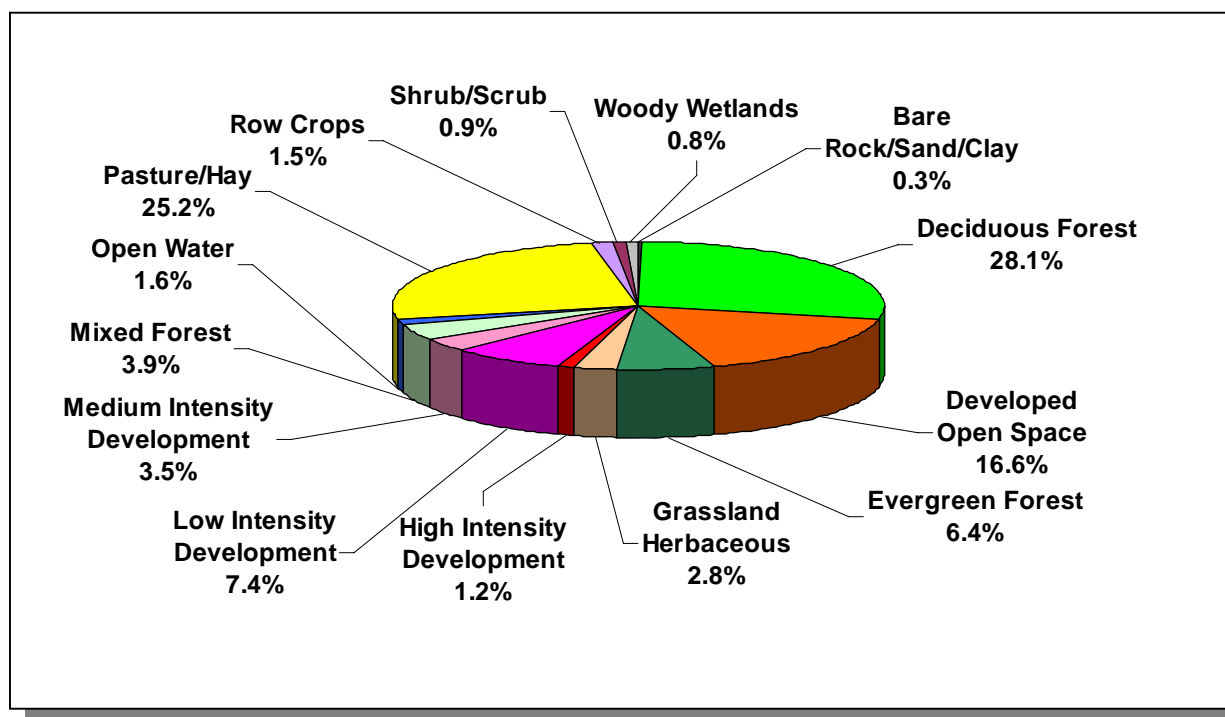


Figure 4-161. Land Use Distribution in Subwatershed 060101040304. More information is provided in Appendix IV.

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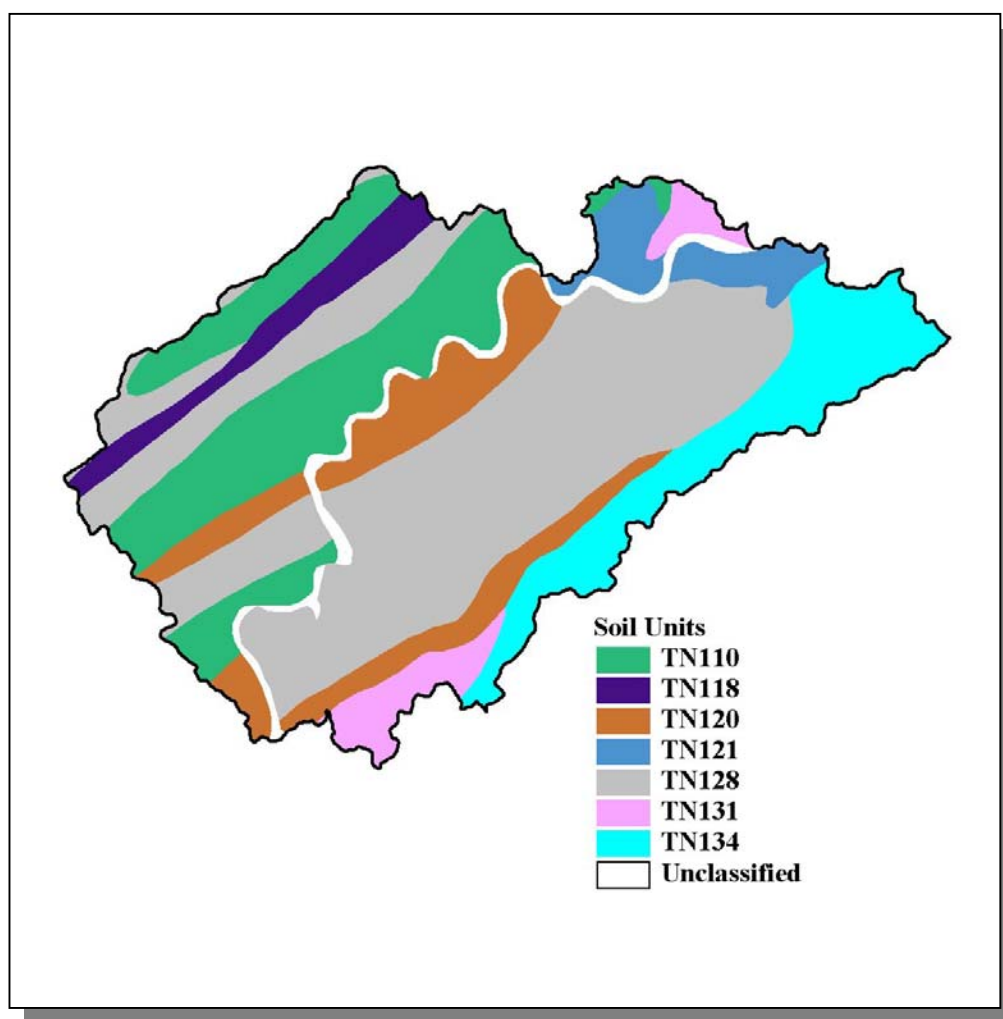


Figure 4-162. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060101040304.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN110	0.00	B	2.22	4.96	Loam	0.31
TN118	0.00	C	6.52	5.12	Loam	0.29
TN120	0.00	B	1.58	5.11	Loam	0.27
TN121	0.00	B	1.30	5.21	Loam	0.33
TN128	0.00	C	1.30	6.53	Clayey Loam	0.26
TN131	0.00	C	1.17	4.95	Silty Loam	0.33
TN134	0.00	B	1.38	5.18	Loam	0.31

Table 4-130. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060101040304. The definition of "Hydrologic Group" is provided in Appendix IV.

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County	COUNTY POPULATION			Portion of Watershed (%)	ESTIMATED POPULATION IN WATERSHED			% Change (1990-2000)
	1990	1997	2000		1990	1997	2000	
Jefferson	33,016	42,168	44,294	0.04	13	16	17	30.8
Knox	335,749	365,900	382,032	13.15	44,144	48,108	50,229	13.8
Sevier	51,043	62,774	71,170	0.22	114	140	159	39.5
Total	419,808	470,842	497,496		44,271	48,264	50,405	13.9

Table 4-131. Population Estimates in Subwatershed 060101040304.

Populated Place	County	Population	NUMBER OF HOUSING UNITS			
			Total	Public Sewer	Septic Tank	Other
Knoxville	Knox	165,121	76,453	74,884	1,521	48

Table 4-132. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 060101040304.

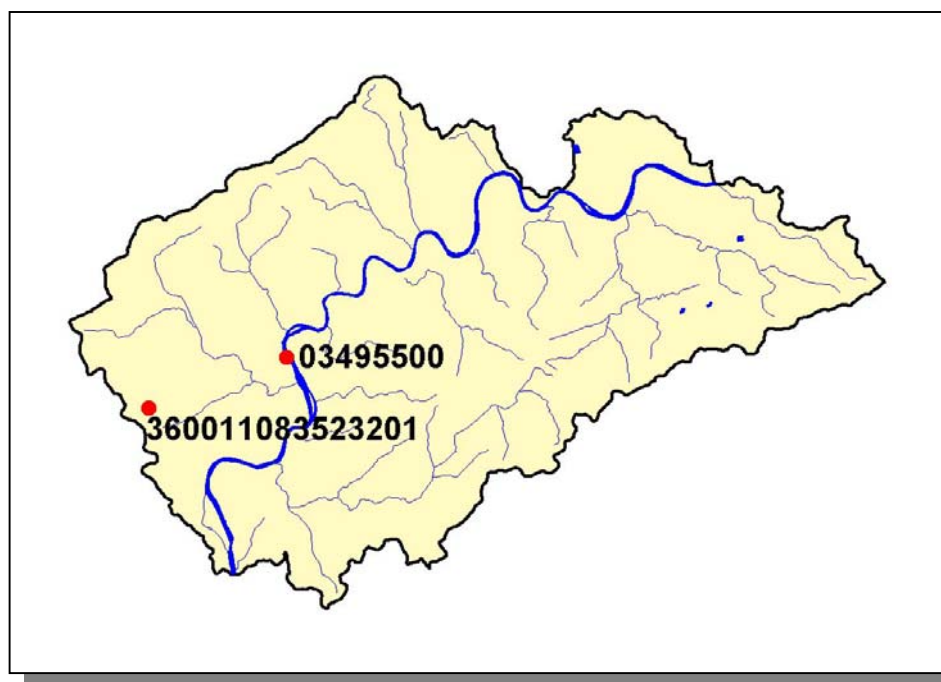


Figure 4-163. Location of Historical Streamflow Data Collection Sites in Subwatershed 060101040304. More information is provided in Appendix IV.

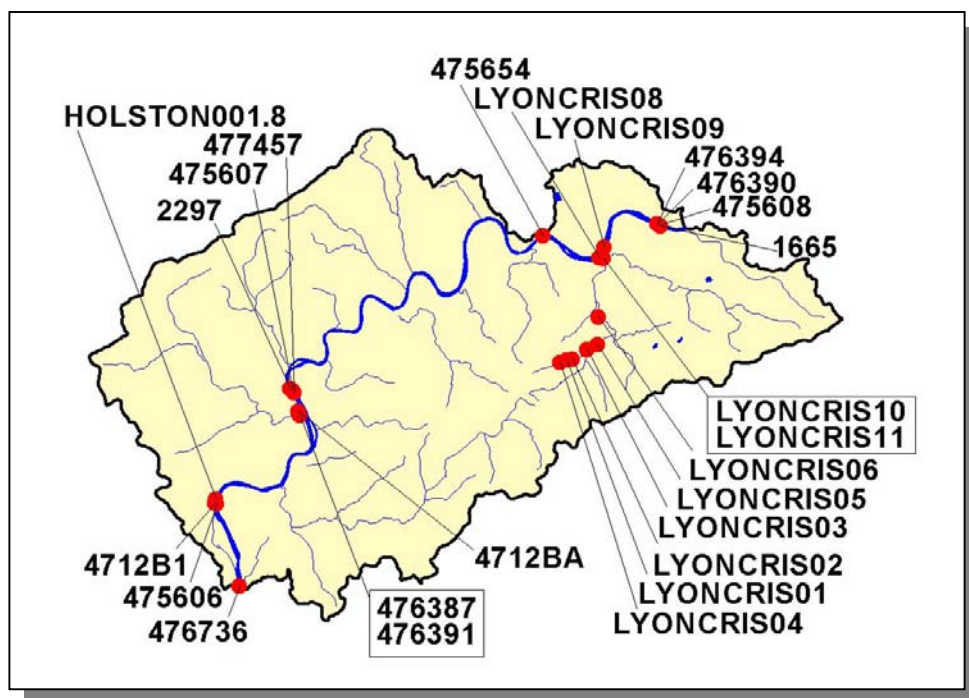


Figure 4-164. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 060101040304. More information, including site names and locations, is provided in Appendix IV.

4.2.C.iv.a. Point Source Contributions.

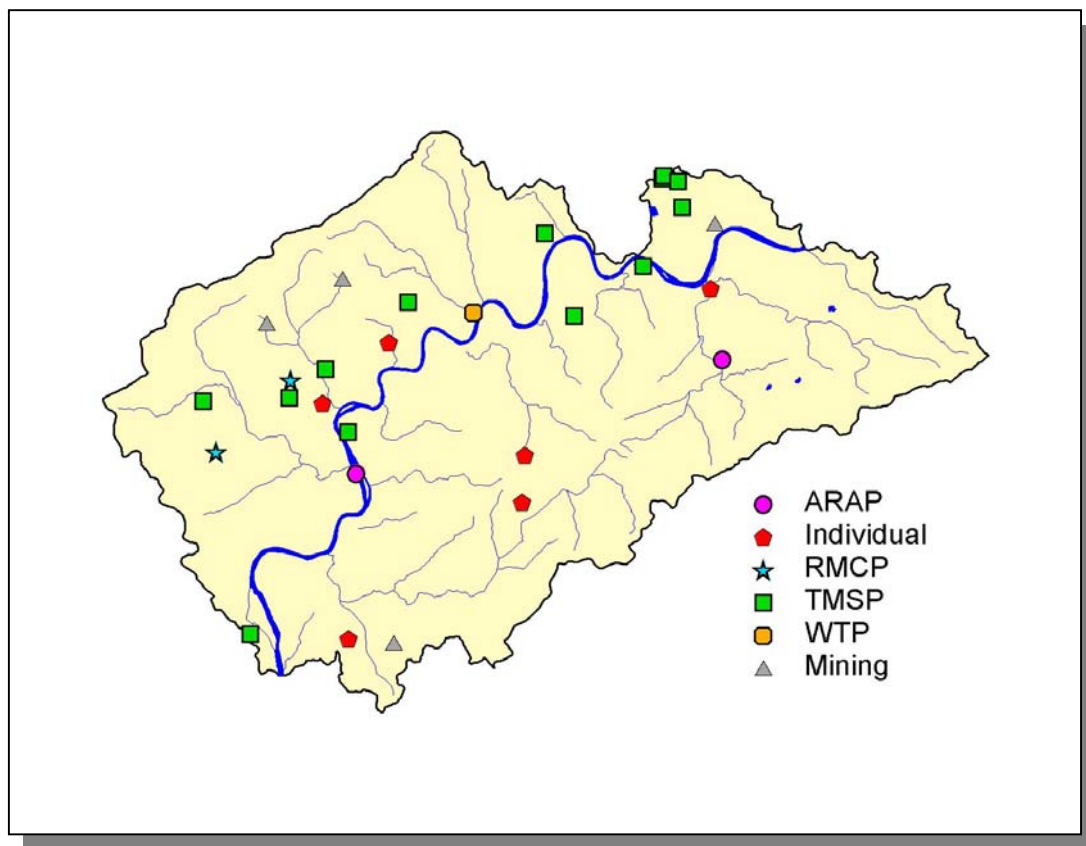


Figure 4-165. Location of Permits Issued in Subwatershed 060101040304. More information, including the names of facilities, is provided in Appendix IV.

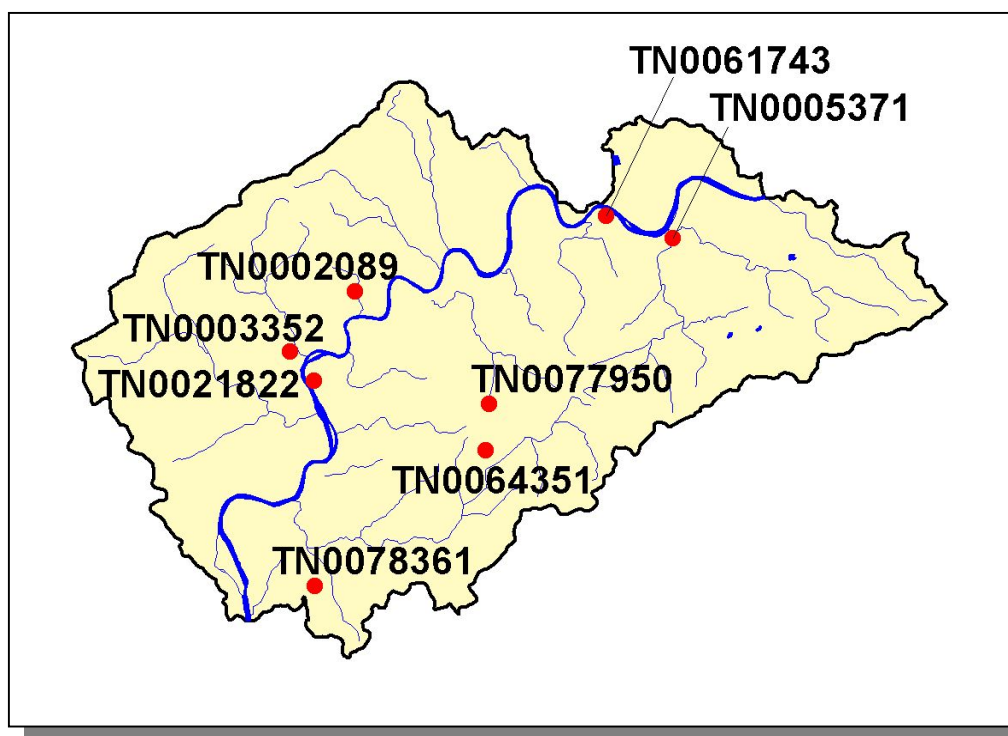


Figure 4-166. Location of Active NPDES Sites in Subwatershed 060101040304. More information, including the names of facilities, is provided in Appendix IV.

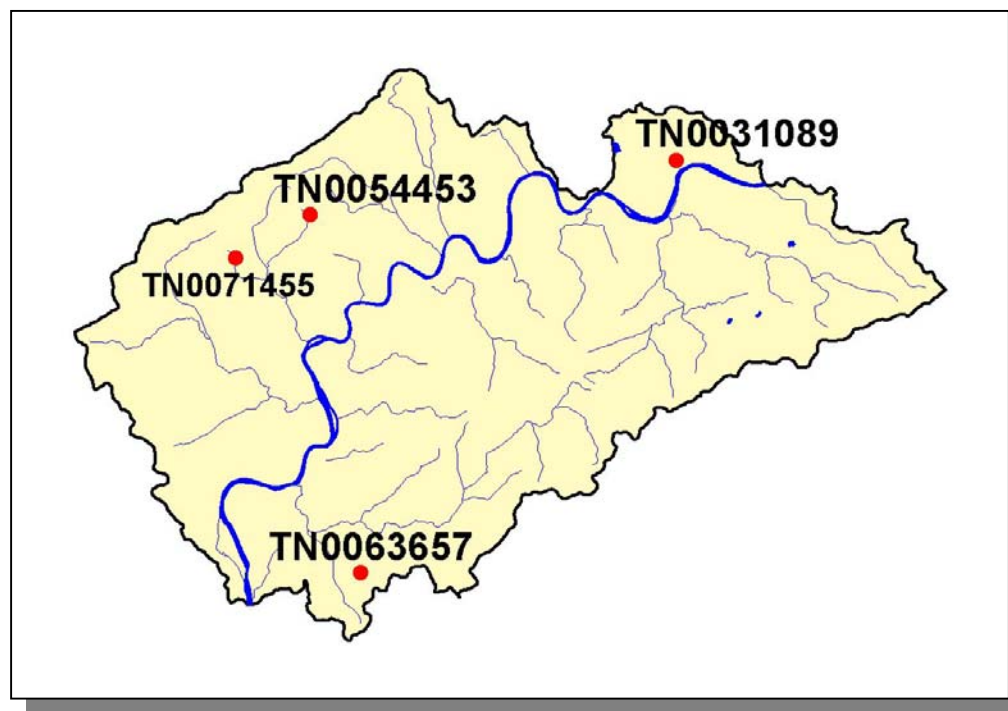


Figure 4-167. Location of Mining Sites in Subwatershed 060101040304. More information, including the names of mining operations, is provided in Appendix IV.

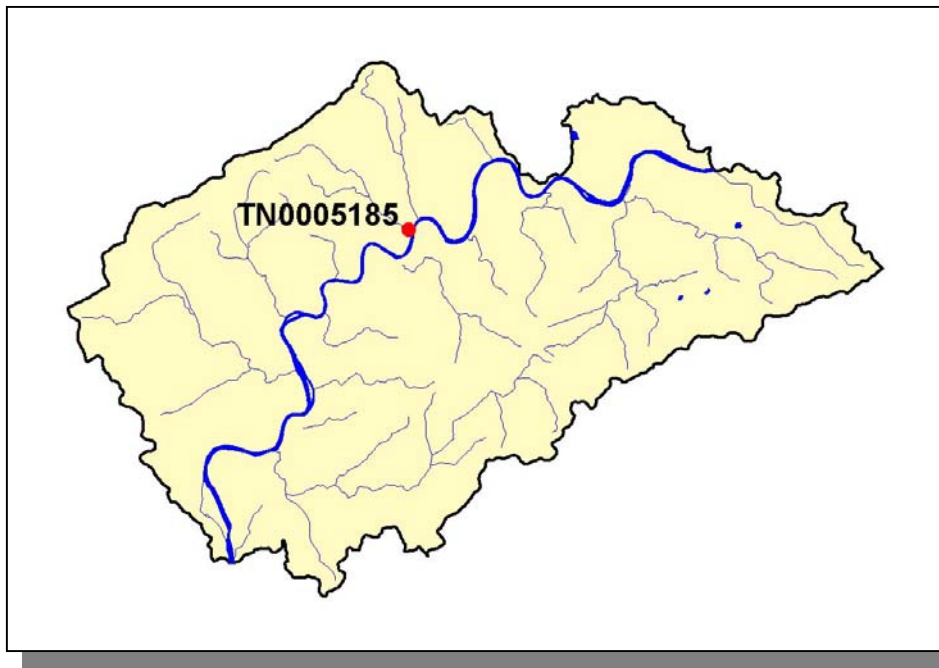


Figure 4-168. Location of Water Treatment Plants in Subwatershed 060101040304. More information, including the names of facilities, is provided in Appendix IV.

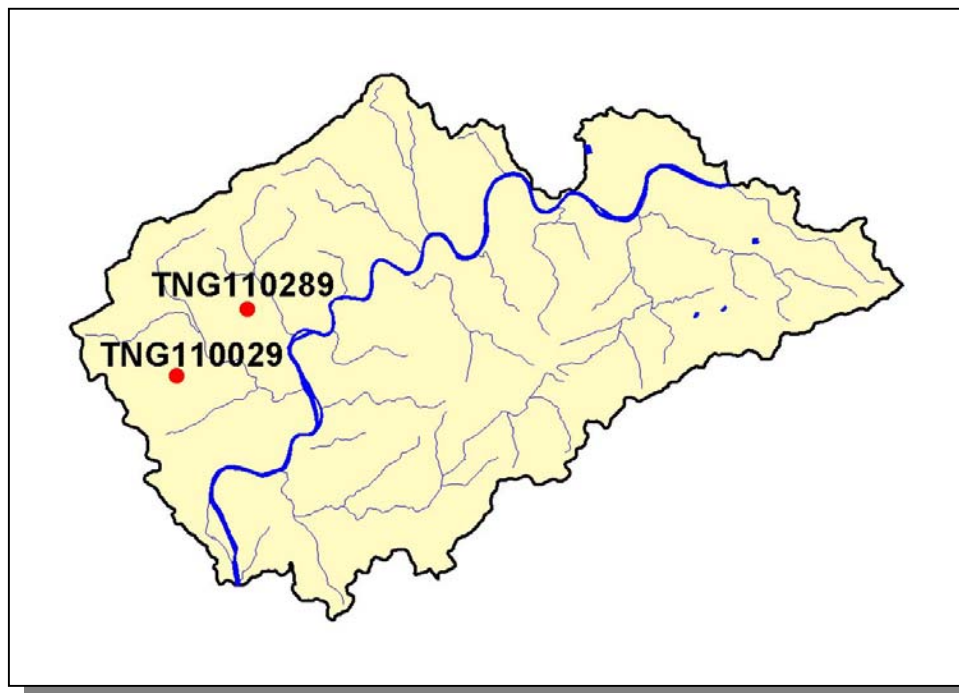


Figure 4-169. Location of Ready Mix Concrete Plants (RMCP) in Subwatershed 060101040304. More information is provided in Appendix IV.

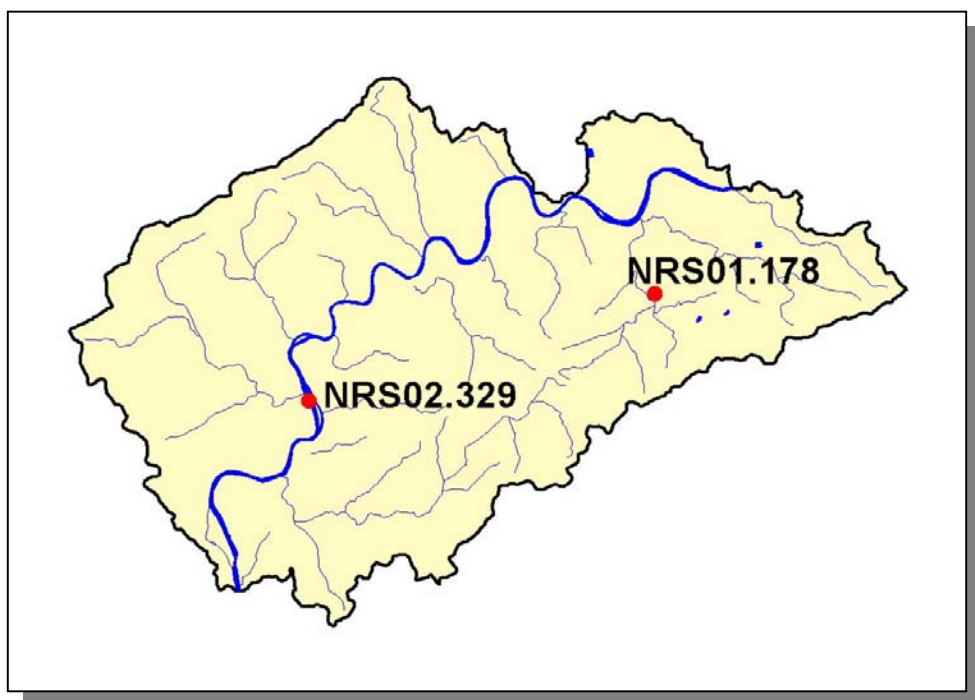


Figure 4-170. Location of Aquatic Resource Alteration Permit (ARAP) Sites (Individual Permits) in Subwatershed 060101040304. More information is provided in Appendix IV.

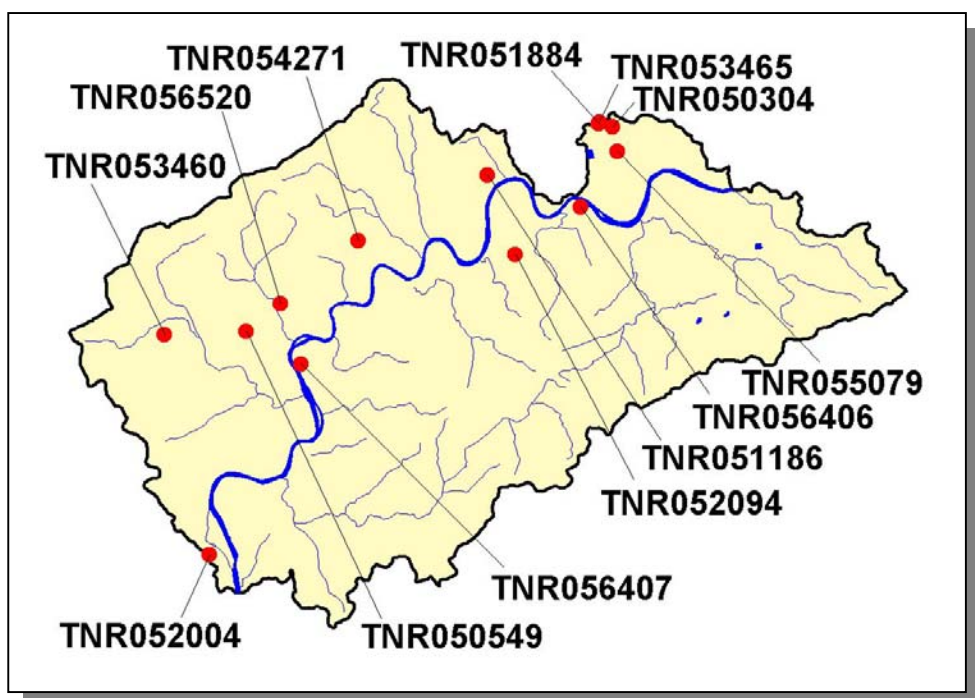


Figure 4-171. Location of TMRP Sites in Subwatershed 060101040304. More information, including the names of facilities, is provided in Appendix IV.

4.2.C.iv.a.i. Dischargers to Water Bodies Listed on the 2004 303(d) List

There are three NPDES facilities discharging to water bodies listed on the 2004 303(d) list in Subwatershed 060101040304:

- TN0064351 (Pilot Travel Centers) discharges to Pratt Branch @ RM 0.2
- TN0077950 (Kwik-Shop #398) discharges to Pratt Branch @ RM 1.0
- TN0078361 (Aqua Chem, Inc.) discharges to Sand Branch

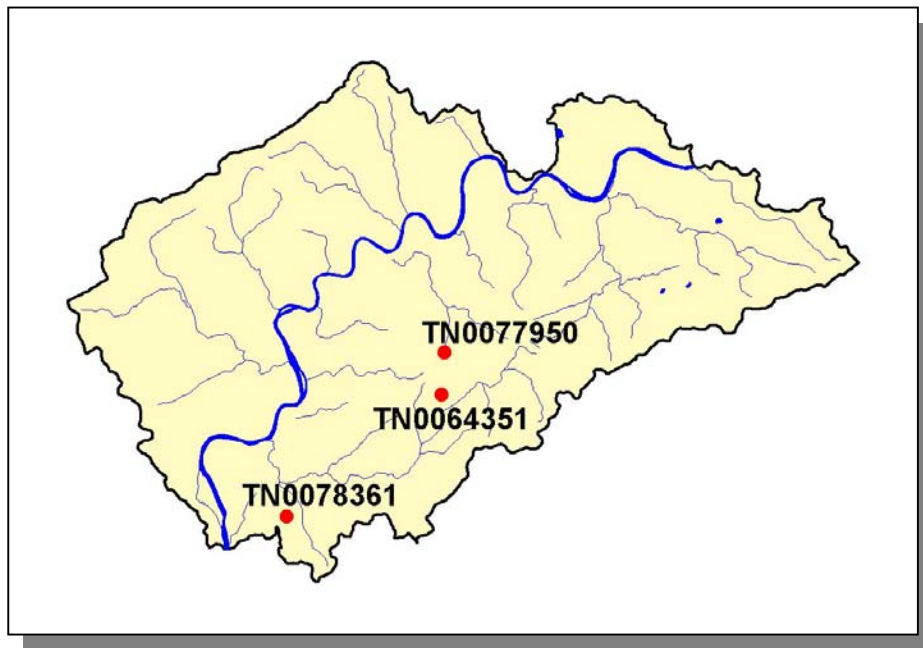


Figure 4-172. Location of NPDES Dischargers to Water Bodies Listed on the 2004 303(d) List in Subwatershed 060101040304. More information, including the names of facilities, is provided in Appendix IV.

PERMIT #	1Q10	3Q10	7Q10	3Q20	QDESIGN
TN0064351					
TN0077950					
TN0078361					

Table 4-133. Receiving Stream Flow Information for NPDES Dischargers to Waterbodies Listed on the 2004 303(d) List in Subwatershed 060101040304. Data are in million gallons per day (MGD). Data were obtained from the USGS publication Flow Duration and Low Flows of Tennessee Streams Through 1992 or from permit files.

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PERMIT #	BENZENE	MBAS	VISIBLE OIL	NO ₃ +NO ₂	Zn	Al	TEMPERATURE	FLOW
TN0064351	X	X	X					
TN0077950	X							X
TN0078361				X	X	X	X	X

Table 4-134. Monitoring Requirements for NPDES Dischargers to Waterbodies Listed on the 2004 303(d) List in Subwatershed 060101040304. MBAS, Methylene-blue-active-substances.

PERMIT #	CBOD ₅	Zn	Al	TSS	SETTLEABLE SOLIDS	Oil and GREASE	DO	pH
TN0064351	X	X		X	X	X		X
TN0077950				X		X		X
TN0078361				X		X	X	X

Table 4-135. Parameters Monitored for Daily Maximum Limits for NPDES Dischargers to Waterbodies Listed on the 2004 303(d) List in Subwatershed 060101040304. WET, Whole Effluent Toxicity; CBOD₅, Carbonaceous Biochemical Oxygen Demand (5-Day); TSS, Total Suspended Solids.

4.2.C.iv.b. Nonpoint Source Contributions.

LIVESTOCK (COUNTS)						
Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Chickens (Broilers Sold)	Hogs	Sheep
2,804	5,566	190	7	12,403	190	144

Table 4-136. Summary of Livestock Count Estimates in Subwatershed 060101040304. According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older; "Chickens Sold" are all chickens used to produce meat.

LIVESTOCK COUNTS							
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Chickens (Broilers Sold)	Hogs	Sheep
Jefferson	16,126	35,718	1,878	1,633	1,880,000	183	567
Knox	12,424	24,664	855	2,056	0	851	649
Sevier	9,816	19,013	172	26	1,572,010	394	234

Table 4-137. Summary of Livestock Count Estimates in Jefferson, Knox, and Sevier Counties. According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older; "Chickens Sold" are all chickens used to produce meat.

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County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Jefferson	62.2	62.2	0.6	1.8
Knox	127.5	127.0	2.2	8.2
Sevier	254.5	127.4	0.3	0.9

Table 4-138. Forest Acreage and Annual Removal Rates (1987-1994) in Jefferson, Knox, and Sevier Counties.

CROPS	TONS/ACRE/YEAR
Grass (Pastureland)	0.89
Grass (Hayland)	0.12
Legumes, Grass (Hayland)	0.24
Grass, Forbs, Legumes (Mixed Pasture)	0.47
Corn (Row Crops)	1.21
Tobacco (Row Crops)	15.24
Soybeans (Row Crops)	15.54
Wheat (Close-Grown Cropland)	4.54
Oats (Close-Grown Cropland)	13.51
Summer Fallow (Other Cropland)	3.31
Farmsteads and Ranch Headquarters	0.18

Table 4-139. Annual Estimated Total Soil Loss in Subwatershed 060101040304.

4.2.C.v. 060101040305 (Flat Creek).

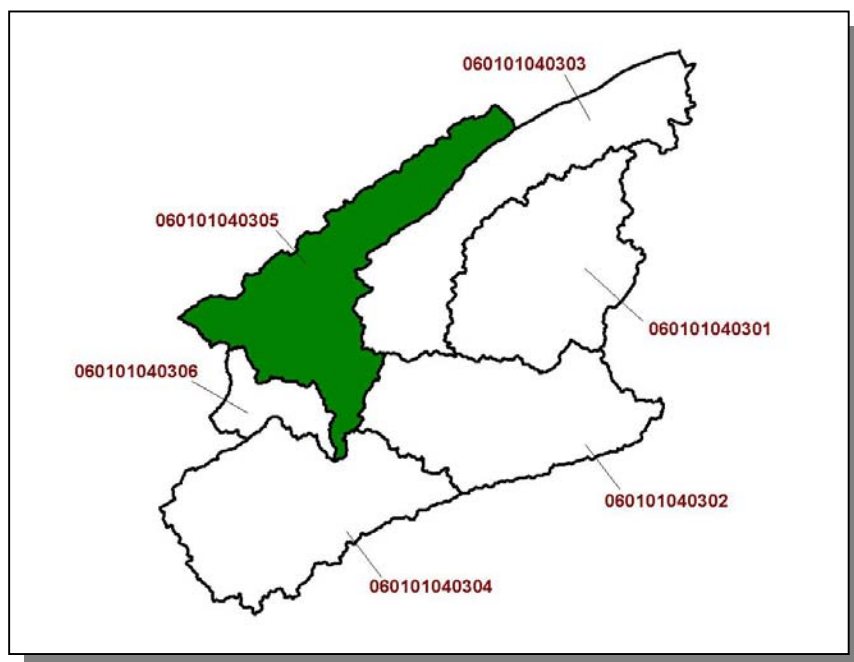


Figure 4-173. Location of Subwatershed 060101040305. All HUC-12 subwatershed boundaries are shown for reference.

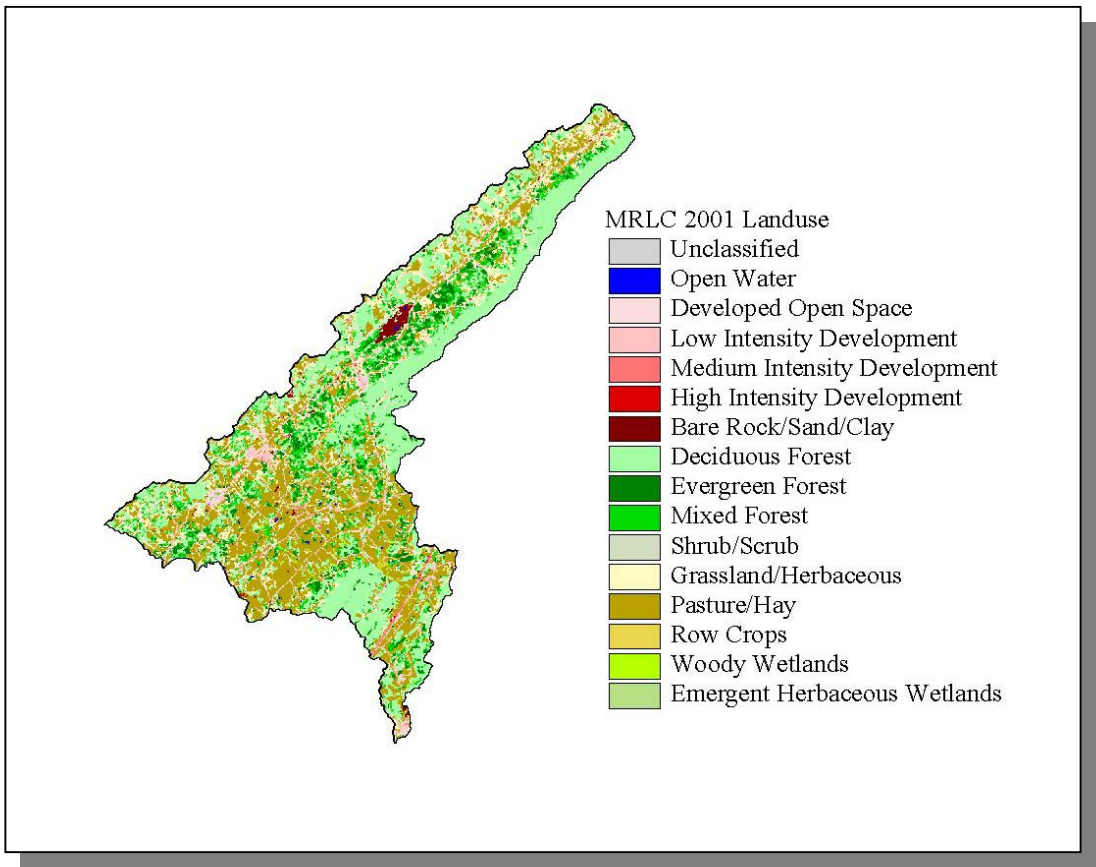


Figure 4-174. Illustration of Land Use Distribution in Subwatershed 060101040305.

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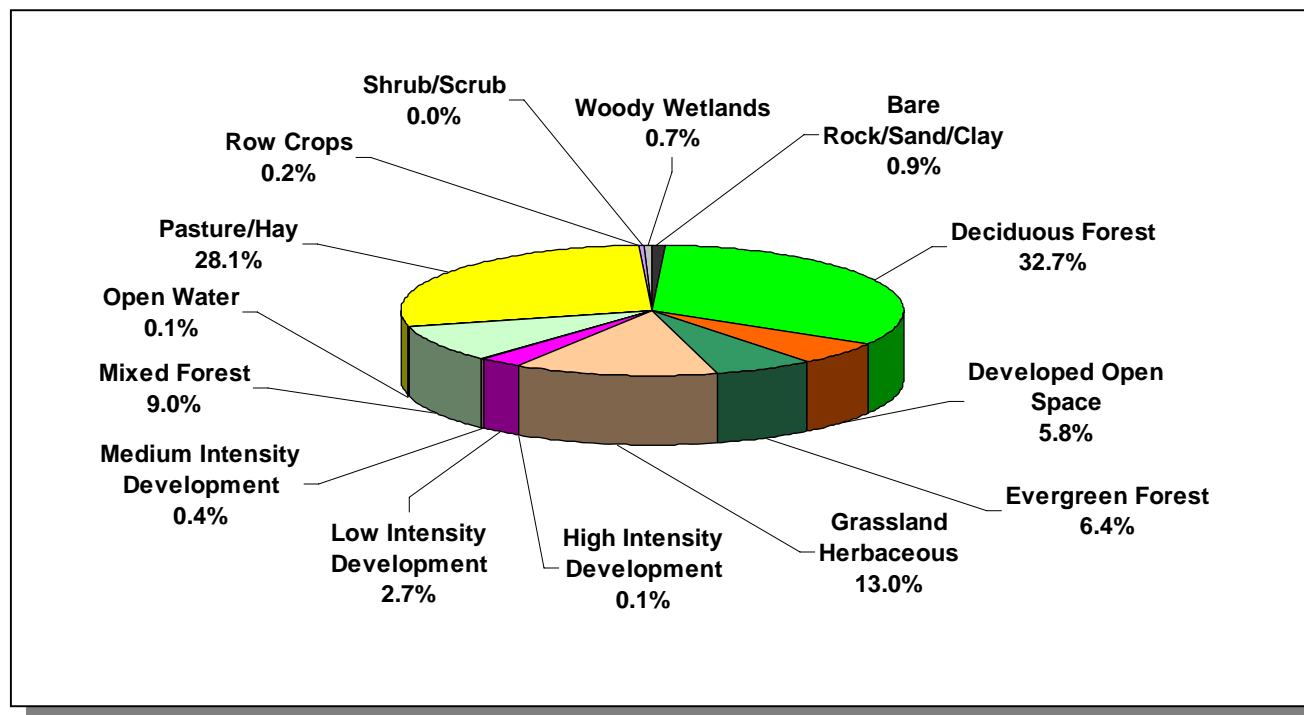


Figure 4-175. Land Use Distribution in Subwatershed 060101040305. More information is provided in Appendix IV.

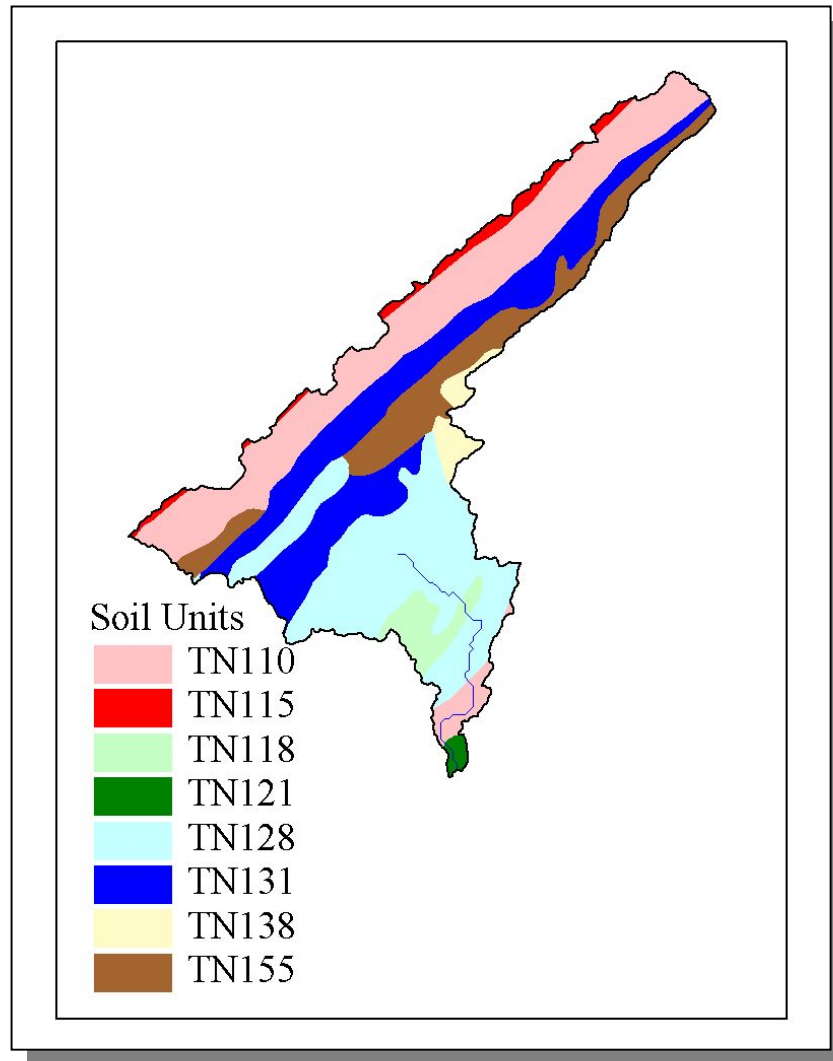


Figure 4-176. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060101040305.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN110	0.00	B	2.22	4.96	Loam	0.31
TN115	0.00	C	1.41	5.15	Silty Loam	0.36
TN118	0.00	C	6.52	5.12	Loam	0.29
TN121	0.00	B	1.30	5.21	Loam	0.33
TN128	0.00	C	1.30	6.53	Clayey Loam	0.26
TN131	0.00	C	1.17	4.95	Silty Loam	0.33
TN138	0.00	C	2.48	4.26	Sandy Loam	0.22

Table 4-140. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060101040305. The definition of "Hydrologic Group" is provided in Appendix IV.

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County	COUNTY POPULATION			Portion of Watershed (%)	ESTIMATED POPULATION IN WATERSHED			% Change (1990-2000)
	1990	1997	2000		1990	1997	2000	
Grainger	17,095	19,456	20,659	5.17	885	1,007	1,069	20.8
Knox	335,749	365,900	382,032	6.24	20,956	22,838	23,845	13.8
Union	13,694	15,956	17,808	8.29	1,135	1,322	1,476	30.0
Total	366,538	401,312	420,499		22,976	25,167	26,390	14.9

Table 4-141. Population Estimates in Subwatershed 060101040305.

Populated Place	County	Population	NUMBER OF HOUSING UNITS			
			Total	Public Sewer	Septic Tank	Other
Luttrell	Union	812	303	4	274	25
Plainview	Union	2,165	853	50	789	14
Blaine	Grainger	1,326	505	9	473	23
Total		4,303	1,661	63	1,536	62

Table 4-142. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 060101040305.

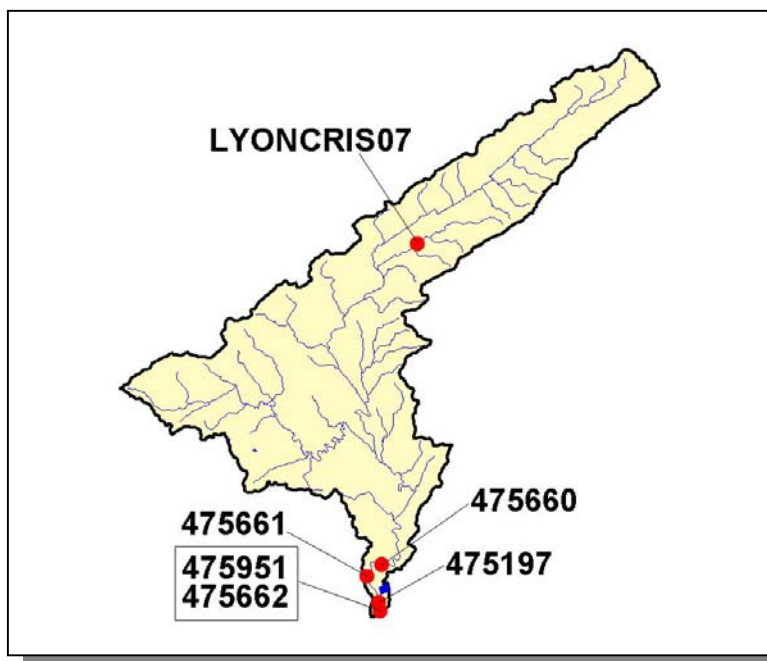


Figure 4-177. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 060101040305. More information, including site names and locations, is provided in Appendix IV.

4.2.C.v.a. Point Source Contributions.



Figure 4-178. Location of Permits Issued in Subwatershed 060101040305. More information, including the names of facilities, is provided in Appendix IV.

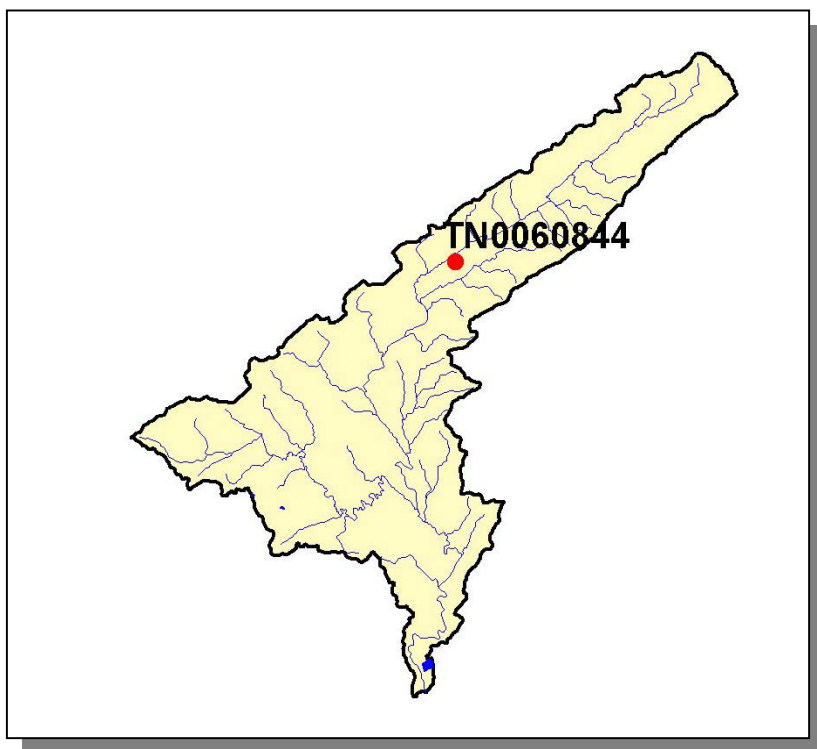


Figure 4-179. Location of Active Mining Sites in Subwatershed 060101040305. More information, including the names of mining operations, is provided in Appendix IV.



Figure 4-180. Location of Water Treatment Plants in Subwatershed 060101040305. More information, including the names of facilities, is provided in Appendix IV.

4.2.C.v.a.i. Dischargers to Water Bodies Listed on the 2004 303(d) List

There is one NPDES facility discharging to water bodies listed on the 2004 303(d) list in Subwatershed 060101040305:

- TN0074080 (Luttrell-Blaine-Corryton WTP) discharges to Little Flat Creek

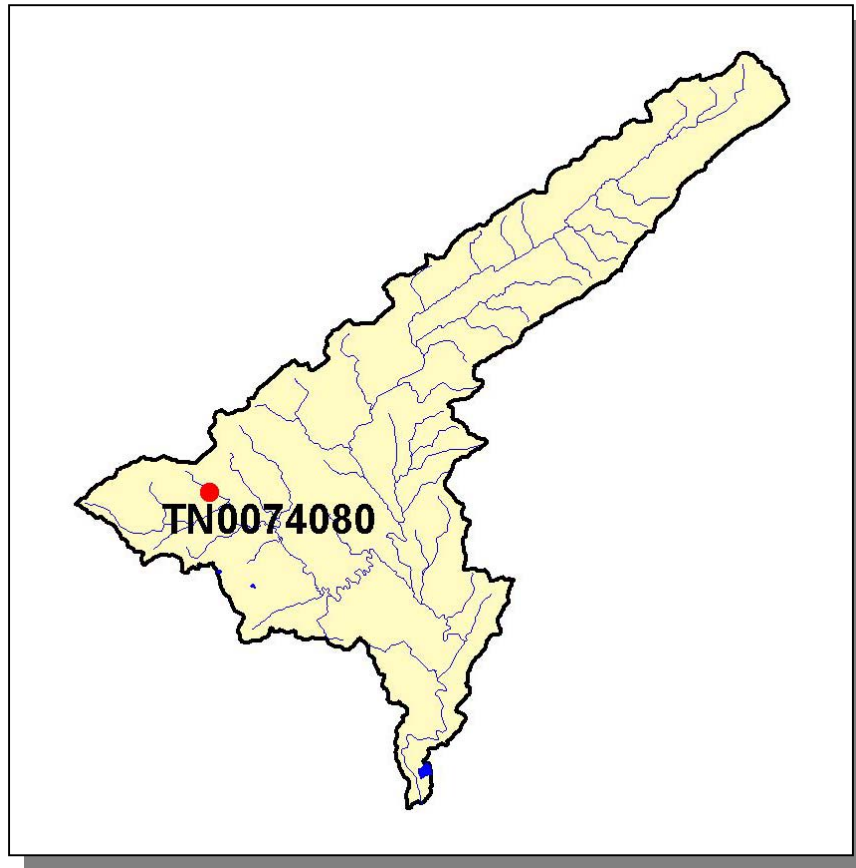


Figure 4-181. Location of NPDES Dischargers to Water Bodies Listed on the 2004 303(d) List in Subwatershed 060101040305. More information, including the names of facilities, is provided in Appendix IV.

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PERMIT #	1Q10	3Q10	7Q10	3Q20	QDESIGN
TN0074080					

Table 4-143. Receiving Stream Flow Information for NPDES Dischargers to Waterbodies Listed on the 2004 303(d) List in Subwatershed 060101040305. Data are in million gallons per day (MGD). Data were obtained from the USGS publication Flow Duration and Low Flows of Tennessee Streams Through 1992 or from permit files.

PERMIT #	FLOW
TN0074080	X

Table 4-144. Monitoring Requirements for NPDES Dischargers to Waterbodies Listed on the 2004 303(d) List in Subwatershed 060101040305. MBAS, Methylene-blue-active-substances.

PERMIT #	AI	TSS	TRC	SETTLEABLE SOLIDS	pH
TN0074080	X	X	X	X	X

Table 4-145. Parameters Monitored for Daily Maximum Limits for NPDES Dischargers to Waterbodies Listed on the 2004 303(d) List in Subwatershed 060101040305. WET, Whole Effluent Toxicity; CBOD₅, Carbonaceous Biochemical Oxygen Demand (5-Day); TRC, Total Residual Chlorine; TSS, Total Suspended Solids.

4.2.C.v.b. Nonpoint Source Contributions.

LIVESTOCK COUNTS					
Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
3,729	7,342	226	11	202	147

Table 4-146. Summary of Livestock Count Estimates in Subwatershed 060101040305. According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.

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LIVESTOCK COUNTS						
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
Grainger	12,115	23,927	942	1,184	510	195
Knox	12,424	24,664	855	2,056	851	649
Union	5,540	10,575	105	981	93	96

Table 4-147. Summary of Livestock Count Estimates in Grainger Knox, and Union Counties. According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Grainger	102.6	102.6	0.3	1.8
Knox	127.5	127.0	2.2	8.2
Union	102.5	102.5	0.1	0.0

Table 4-148. Forest Acreage and Annual Removal Rates (1987-1994) in Grainger, Knox, and Union Counties.

CROPS	TONS/ACRE/YEAR
Grass (Pastureland)	0.79
Grass (Hayland)	0.69
Legumes, Grass (Hayland)	0.36
Grass, Forbs, Legumes (Mixed Pasture)	0.90
Corn (Row Crops)	2.59
Soybeans (Row Crops)	15.54
Tobacco (Row Crops)	7.21
Wheat (Close-Grown Cropland)	4.44
Farmsteads and Ranch Headquarters	0.27

Table 4-149. Annual Estimated Total Soil Loss in Subwatershed 060101040305.

4.2.C.vi. 060101040306 (Roseberry Creek).

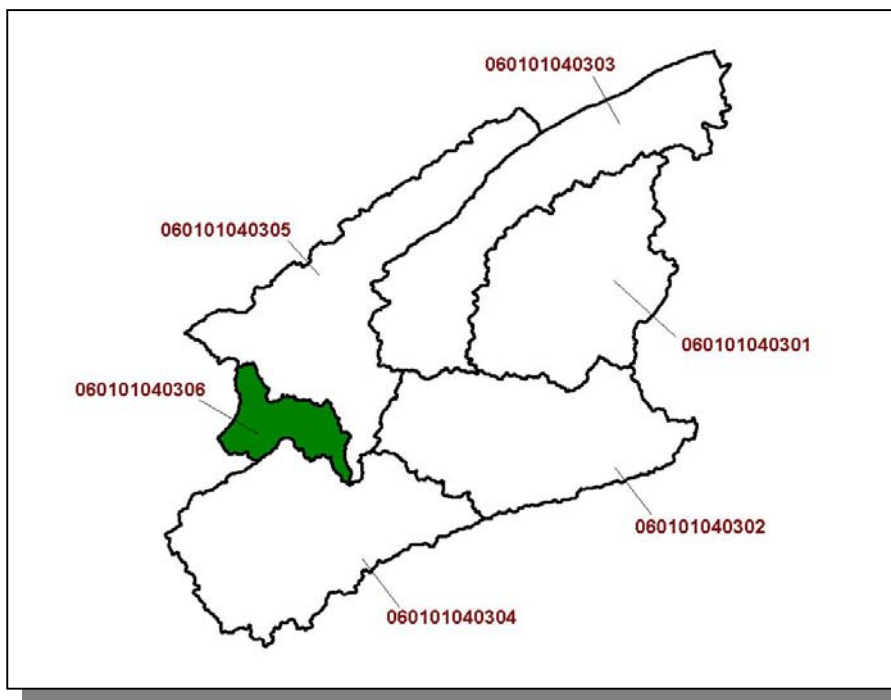


Figure 4-182. Location of Subwatershed 060101040306. All HUC-12 subwatershed boundaries are shown for reference.

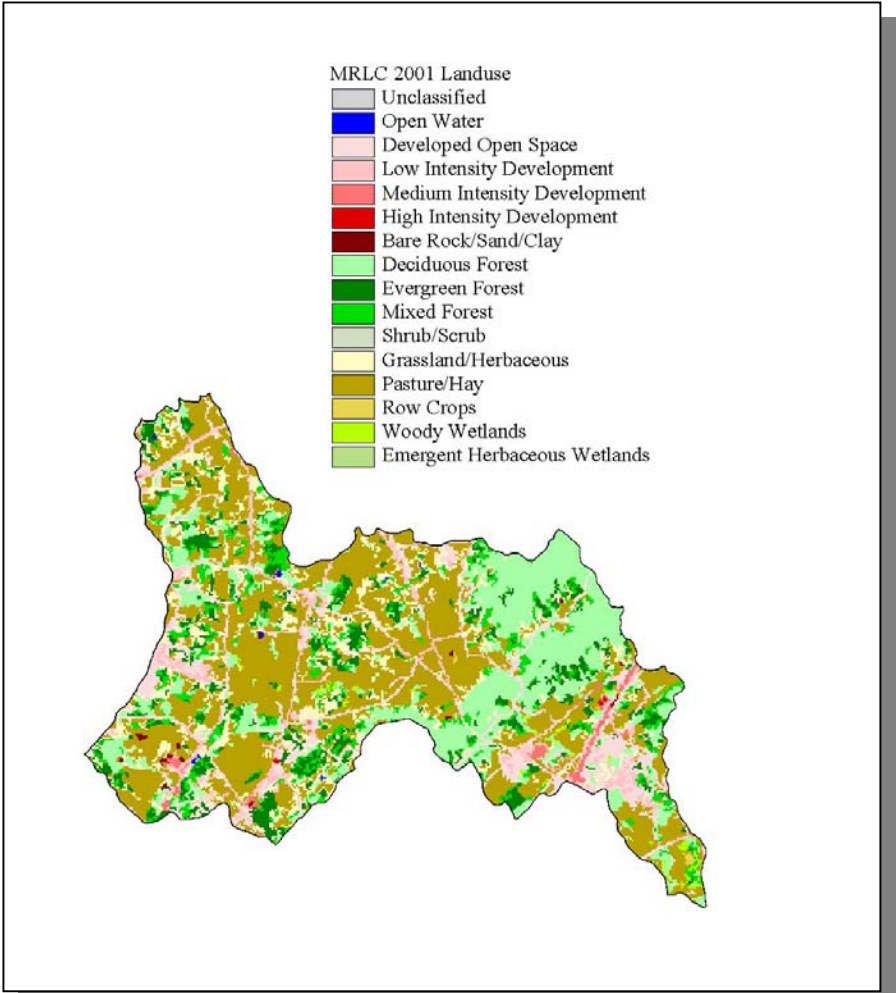


Figure 4-183. Illustration of Land Use Distribution in Subwatershed 060101040306.

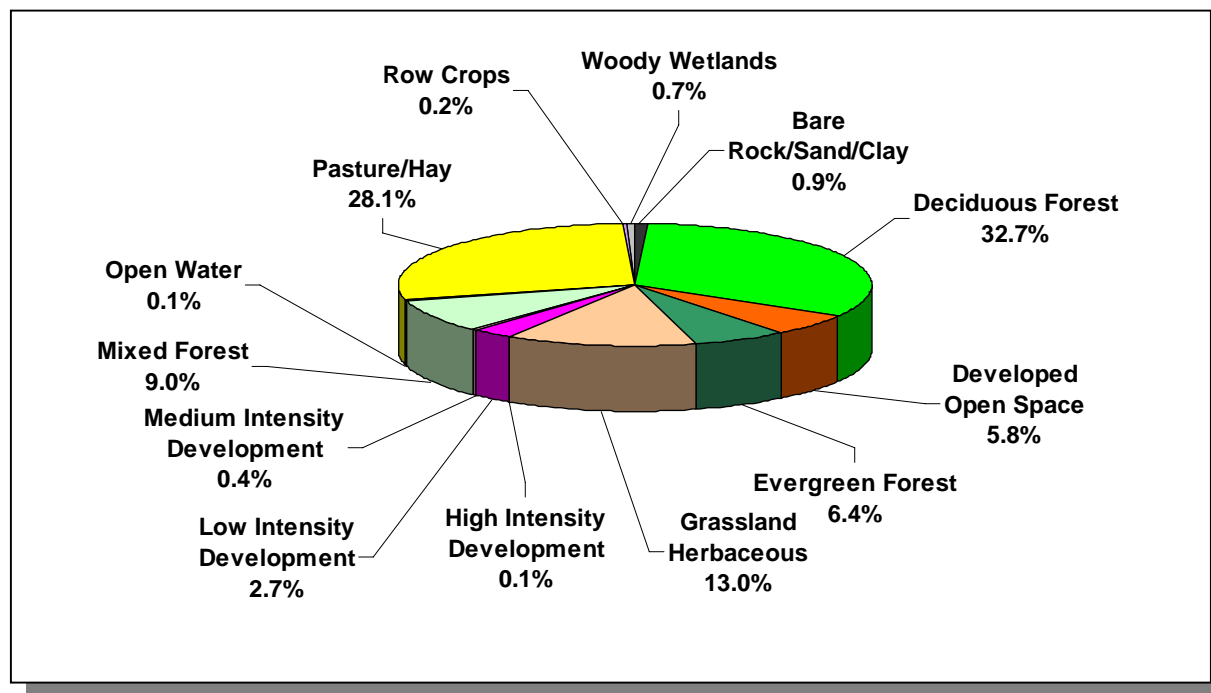


Figure 4-184. Land Use Distribution in Subwatershed 060101040306. More information is provided in Appendix IV.

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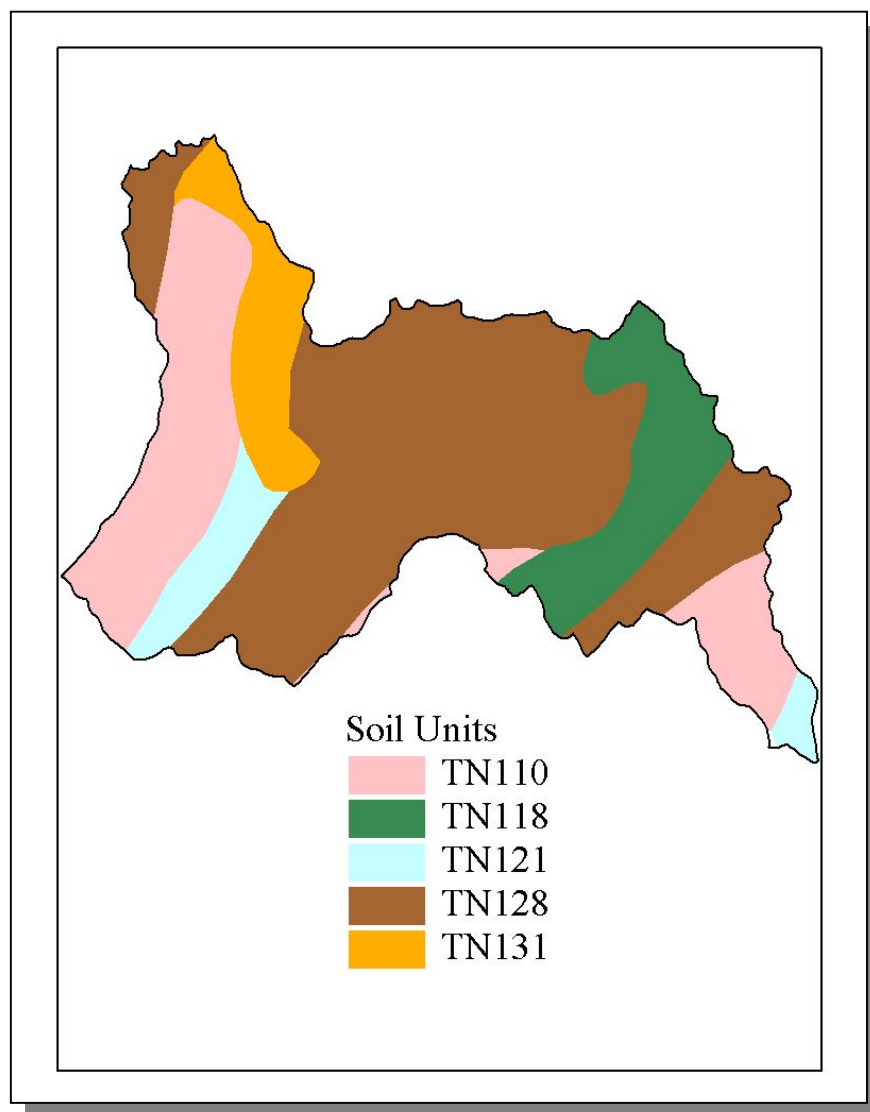


Figure 4-185. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060101040306.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN110	0.00	B	2.22	4.96	Loam	0.31
TN118	0.00	C	6.52	5.12	Loam	0.29
TN121	0.00	B	1.30	5.21	Loam	0.33
TN128	0.00	C	1.30	6.53	Clayey Loam	0.26
TN131	0.00	C	1.17	4.95	Silty Loam	0.33

Table 4-150. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060101040306. The definition of "Hydrologic Group" is provided in Appendix IV.

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County	COUNTY POPULATION			Portion of Watershed (%)	ESTIMATED POPULATION IN WATERSHED			% Change (1990-2000)
	1990	1997	2000		1990	1997	2000	
Knox	335,749	365,900	382,032	2.72	9,129	9,949	10,387	13.8

Table 4-151. Population Estimates in Subwatershed 060101040306.

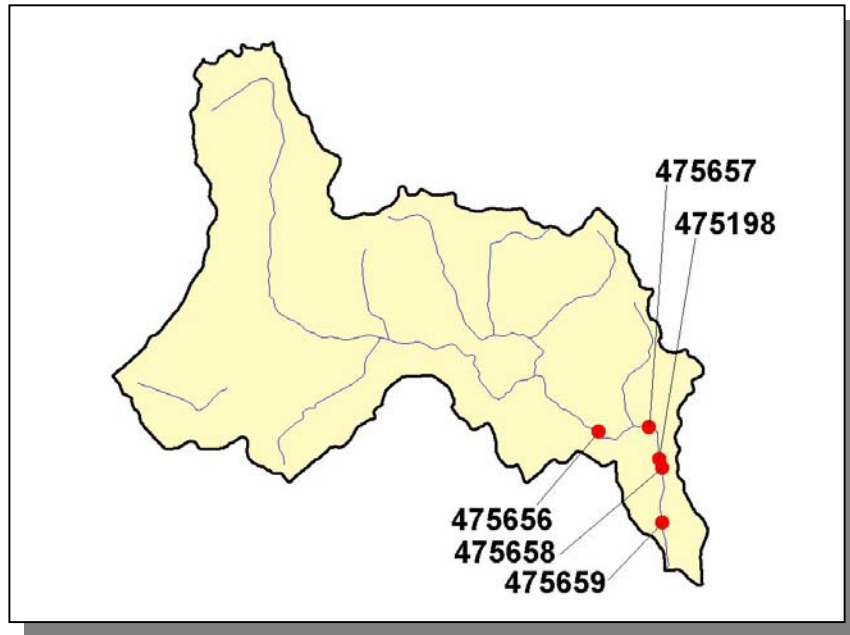


Figure 4-186. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 060101040306. More information, including site names and locations, is provided in Appendix IV.

4.2.C.vi.a. Point Source Contributions.

There are no point source contributions in this subwatershed.

4.2.C.vi.b. Nonpoint Source Contributions.

LIVESTOCK COUNTS					
Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
939	1,864	65	<5	64	49

Table 4-152. Summary of Livestock Count Estimates in Subwatershed 060101040306. According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.

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LIVESTOCK COUNTS						
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
Knox	12,424	24,664	855	2,056	851	649

Table 4-153. Summary of Livestock Count Estimates in Knox County. According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Knox	127.5	127.0	2.2	8.2

Table 4-154. Forest Acreage and Annual Removal Rates (1987-1994) in Knox County.

CROPS	TONS/ACRE/YEAR
Grass (Pastureland)	0.90
Grass (Hayland)	0.12
Legumes, Grass (Hayland)	0.25
Grass, Forbs, Legumes (Mixed Pasture)	0.47
Corn (Row Crops)	1.10
Soybeans (Row Crops)	15.54
Wheat (Close-Grown Cropland)	4.44
Farmsteads and Ranch Headquarters	0.18

Table 4-155. Annual Estimated Total Soil Loss in Subwatershed 060101040306.